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ABSTRACT

This study discusses innovation in inservice education and training of teachers (INSET) in the Federal Republic of Germany and Switzerland. The first section deals with the INSET program in relationship to each country's educational system. Section two describes three case studies. They include INSET during a six-month period at a teacher training college in Switzerland, INSET and scholastic reform in West Berlin, and INSET and curricular reform in Canton Lucerne, Switzerland. Section three examines some theoretical perspectives dealing with INSET in both countries. Participative and constructive planning and execution of INSET and a model of continuous INSET are discussed. A bibliography is included. (SK)

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INNOVATION IN IN-SERVICE EDUCATION AND TRAINING OF TEACHERS

FED. REP. OF GERMANY SWITZERLAND

U S DEPARTMENT OF HEALTH
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

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CENTRE FOR EDUCATIONAL RESEARCH AND INNOVATION (CERI)

INNOVATION IN IN-SERVICE EDUCATION AND TRAINING OF TEACHERS

- FEDERAL REPUBLIC OF GERMANY -

- SWITZERLAND -

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Section 1: INTRODUCTION : THE NATIONAL CONTEXTS

Part I : Introduction

The Federal Republic of Germany and Switzerland are two independent countries. The school systems as well as the tertiary systems (universities and colleges) are different. Nonetheless, certain similarities between the two countries within the European framework can be observed. Yet this is not the reason why the countries are treated in a common report. The reason is of a technical nature. Besides that, it arises from the organization of the report.

There would not have been sufficient space for comprehensive studies of the two countries within the framework of the INSET project. That is why a coordinated report was written. This was possible because CERI, together with the IPN (Institute for Science Education in Germany) carried out a 14-day seminar on the "Conditions and models of curriculum innovation". 90 representatives of the education administration, of research and of direct educational practice from the Federal Republic of Germany and Switzerland took part.

INSET proved to be a main condition for the permanent reform of the curriculum, i.e. of the infrastructure of the educational systems.

Part VII of this report is the direct result of a work group of the seminar. Part VII contains a general suggestion for procedure for the participative and constructive planning and execution of INSET activities.

One must keep in mind, however, that INSET is dependent on the education system, the administrative constitution, the political relations and many other factors. That is why parts II and III describe briefly the conditions in the Federal Republic of Germany and in Switzerland. These summaries provide basic information and they draw conclu-

sions. They point out deficits and measures which are to be met in the coming years. These two summaries permit the reader to localize and to judge the different case studies.

Because this report had to be drawn up within a few weeks, the case studies chosen had to have final and easily accessible reports already written.

One of the most interesting innovations is the establishment of INSET during a six-month period: the teachers are given a leave of absence for a half a year and are trained further in a certain relation of theory and practice. Since this has nothing to do with a sabbatical year (where teachers pursue their own needs relatively freely) and the teachers are trained according to a functional plan which aims at professionalization, this new approach is described as case study 1 in part IV.

The other two components which come into question, in view of the four criteria in present-day practice in the two countries, are INSET activities in connection with general global school reform, i.e. reforms of the entire school system beginning with the schoolhouse construction, schedule, school goals, personnel qualifications etc. Such school system reforms are relatively rare. Usually only small elements of the school system are changed. Such global school reform took place in recent years on the lower level of the "Sekundarstufe" (5th to 10th school years). The relevant INSET activities of the teaching staff are described in case study 2.

The more common case is that of INSET in connection with curricular reforms, i.e. reforms in individual school disciplines or fields of the curriculum. Here, a familiar pragmatic solution to the problem has been adopted. The teaching material is adjusted to the teachers. Then the teachers receive brief instructions with the teaching and learning material. Often INSET is limited only to the

distribution of new materials or to training in methods (material methods system). In the two countries, the Federal Republic of Germany and Switzerland, it was seen that spontaneity and voluntariness are prerequisites for effective INSET. Besides that, it is in accordance with the goals in these two countries to avoid unnecessary administrative constraints on the teachers. However, a certain framework planning and adjustment of INSET to the curricular goals is necessary. The connection between framework planning and self-organization is described in more detail in case study 3. It is related to part VII where a general diagram for the participative and constructive planning of INSET is developed.

The short country reports and the three case studies each refer to individual components of INSET. Even the recommendations, which appeared in recent years on these topics, are valid for individual components. There is a danger that the basic training at universities or colleges of education will be separate from INSET activities. The goals of basic training and in-service training differ. The organizational arrangements differ so greatly that a connection is no longer possible. The training and advisory personnel in basic training possess completely different characteristics. Thus it is necessary to develop a general framework for both areas. This is done in part VIII. This framework is the result of the different theoretical, practical and organizational components which were described in the preceding parts.

Part II

The Federal Republic of Germany: The General Situation of In-Service Education and Training of Teachers

1. Pre-Service Teacher Education

Responsibility, in the Federal Republic of Germany, for the school system and, thus, for teacher training and INSET as well lies with the "Länder" (Schleswig-Holstein, Hamburg, Bremen, Lower Saxony, North Rhine Westphalia, Hesse, Rhineland-Palatinate, Baden-Württemberg, Saarland, Bavaria; West Berlin). Because of this, there are certain differences with respect to the organization of teacher training. On the other hand, similar university and educationally historical traditions, recommendations of the German Board of Education ("Deutscher Bildungsrat") and coordinating resolutions of the Conference of Education Ministers ("Kultusministerkonferenz") see to it that there is a relatively homogeneous structure for teacher training. Until a few years ago training for the teaching profession was generally related to the specific types of schools: for "Volksschulen" (school comprised of "Grundschule" and "Hauptschule") or "Grundschulen" (elementary school) and "Hauptschulen" (upper division of the elementary school), "Realschulen" (junior high school), "Gymnasien" (high school), vocational schools and special schools. Training was in the hands of colleges of education or of the education departments of the universities (for the "Grundschule" and the "Hauptschule" 3 years of study were necessary) or it was in the hands of universities or institutes of technology (for the "Realschule" 3 years of study were necessary; for the "Gymnasium" and for vocational schools 4 or more years of study were necessary). Training at colleges of education included educational, specifically instructional and school practical elements, whereas the universities educated future high school teachers only in a specific branch of knowledge. Subsequent to the first state examination for the teaching profession or the academic examination was a professional introductory phase for all teachers - lasting from one to two years. It was especially carefully regulated for high school teachers and presented a combination of elements of practical worth for instruction at a training high school and elements of theoretical worth for instruction at a seminar for teachers. Only after the subsequent second state

examination for the teaching profession, which had the character of an education test for teachers of the "Realschule" and of the "Gymnasium", were the young teachers given a permanent teachers' permit.

This description of the situation is essentially still valid today (especially with respect to the differences between colleges of education and universities when it comes to the duration of training and the type of training) although the training for school levels (primary school level, secondary levels I and II) - to which several countries have gone over, the erection of "Gesamthochschulen" (comprehensive universities), which train for all types of schools or school levels, as well as model attempts of teacher training at the combination of initial training and of introduction to the profession have made this teachers' training system generally more complicated.

2. INSET Institutions and Their Working Methods

INSET activities are carried out by the following institutions: (1) INSET institutes of the individual "Bundesländer", (2) supra-regional INSET institutes which are privately supported, (3) city INSET institutes, (4) contact study institutions of the individual universities, (5) institutions of regional INSET and curriculum development, (6) the German Institute for Correspondence Courses ("Deutsches Institut für Fernstudien") and (7) a number of further offerors.

1. All of the "Bundesländer" and West Berlin have meanwhile established national INSET institutions either in the form of special advisors in the Ministry of Culture, who organize in-service training activities in different meeting places of the corresponding "Land" (Berlin, Lower Saxony), or in the form of independent INSET institutes, partly with local branches (The State Institute of Schleswig-Holstein for the Practice and Theory of the School, The Institute for INSET of the Independent and Hansa City of Hamburg, Research Institute for School Practice of the Independent Hansa City of Bremen, The Hessian Institute for INSET, The State Institute for School Educational Training in North Rhein Westphalia, The State Institute for INSET of the Rhineland-Palatinate, the State Institute for INSET in the

Saarland, The State Academies of Calw and Comburg for Baden-Württemberg, The Academy for INSET in Dillingen - with divisions for the training of Protestant or Catholic religion teachers in Heilsbronn or Gars for Bavaria). These institutions, which are financed and supervised by the "Länder", have the following in common: Besides part-time consultants, they usually have a staff of full-time members who generally started out in the teaching profession; they carry through INSET activities for all school subjects (in the science and teaching of a certain subject) and for school-oriented topics (media, school law, school administration) and take all types of schools and school levels into account. The most popular type of activity is the course which lasts for several days - or in the event of local proximity - a number of activities in the form of a seminar. For the teacher who has applied and been accepted for an INSET activity, participation constitutes and official task. He is exempted from instruction and is reimbursed for all expenses. Aside from special cases, participation in INSET activities is voluntary and is a matter of initiative on the part of the teacher desiring in-service training.

2. The supra-regional INSET institutes which are privately supported are similar to the state institutions in the above-named points. They are supported by a teachers' union in one case ("Diesterweg-Hochschule" in Berlin) and, in other cases, by the Protestant Church (Educational Institute of the Protestant Church of Westphalia, Educational-theological Institute of the Protestant Church in the Rhineland, Educational Science INSET Institute in the Rheinland-Palatinate, The Institute for INSET in Heilsbronn for Bavaria) or by the Catholic Church (Institute for Teacher Training in Essen for North Rhein Westphalia, Institute for INSET in Mainz for the Rheinland-Palatinate, Institute for INSET in Saarbrücken for the Saarland, Institute for INSET in Gars for Bavaria). These institutes receive a considerable amount of state funds for their INSET activities - despite the fact that they are privately supported. With the exception of the institutes in Berlin, Essen, Mainz and Saarbrücken, the INSET institutes carry through mainly or exclusively training activities for religious education.

3. Several INSET institutes are maintained by the cities Bremerhaven, Bochum, Düsseldorf, Cologne, Nuremberg and Munich for the communal faculty. They too have full-time workers at their disposal and offer

a relatively differentiated program of INSET activities. The activities usually take place in the form of lectures or in the form of a series of courses in the afternoon or evening so that an exemption from instruction for the teacher is not necessary and the costs remain within reasonable limits. With the step-by-step establishment of advisory services, to which the teacher can turn with concrete instructional problems, and with the expansion of the libraries and media libraries, the mentioned city INSET institutes, as well as the institutes of the city-states Hamburg and Bremen, are approaching the English model of Teachers' Centres.

Almost all of the mentioned state, city and privately supported INSET institutes publish a semiannual bulletin of activities based on the school year plan and carry through 100 or more - often even several hundred, activities within the space of a half a year. The three named categories of INSET institutes combined offer the predominant portion of the publicized INSET activities in the Federal Republic.

4. Contact study institutions which also carry through INSET activities exist at the following universities: The University of Hamburg, The University of Göttingen, The Technical University of Hannover, The College of Education in Münster, The University of Mainz, the University of Frahkfurt, The College of Education in Heidelberg and - within the framework of attempts at models for teacher training, at the newly founded universities of Bremen, Oldenburg, Osnabrück and Bielefeld. University contact study as a means of teacher training plays practically no role in the Federal Republic of Germany when compared with English-speaking countries.

5. Aside from the mentioned somewhat older INSET institutions, several model attempts have recently begun their work of developing new forms of INSET with teacher participation in curriculum development or in the instructional transformation of the so-called framework guidelines. Due to the initiative of the Founders' Association for German Science ("Stifterverband für die Deutsche Wissenschaft"), "Regional Centers" in Aurich and Bad Kreuznach are disappearing. As a result of the development of Hessian framework guidelines for the different school subjects a "Model Attempt on Regional INSET" has been begun. On the basis of a concept of a Project Group on Curriculum Development/INSET ("Projektgruppe Curriculum-

entwicklung/Lehrerweiterbildung" of the Catholic-supported German Institute for Scientific Education ("Deutsches Institut für wissenschaftliche Pädagogik") in Münster, a regional religious education center ("Regionales Religionspädagogisches Zentrum") has been founded in Munich. All of the mentioned model attempts have the following in common: teacher groups develop curriculum materials or learn to handle curricular materials and framework guidelines together with researchers.

6. Of growing significance for INSET are the correspondence courses of the German Institute for Corrsepondence Courses ("Deutsches Institut für Fernstudien") in Tübingen after the state and privately supported institutes increasingly took over directly looking after the participants of correspondence courses.

7. Activities of INSET are also carried out - even though sporadically and unsystematically, by the different teachers' associations and unions, adult education academies, political science institutions, regional school inspectorates and religious education institutes of the Protestant State Churches and of the Catholic Diocese.

3. Trends in the Development of INSET

In the past 5-10 years, the supply of INSET measures has been extended as well as differentiated and systematized by the establishment of new - or the expansion of existing, state, private and city institutes. Besides this, it has been concentrated more and more strongly on institutions with full-time specialist personnel, which concern themselves exclusively with INSET. The institutionalization and professionalization of INSET as an integral element of teacher training signalizes the significance for the maintenance and further development of teacher competence in a situation of school reforms, which is allotted to this task by educational research and administration.

In the past two years the theoretical discussion on INSET has shifted to questions of the microstructure of INSET, i.e. problems of interaction, cooperation and participation in learning processes of INSET, development of new INSET learning and activity forms, which remain true to their function, connections between in-service training motivation and innovation willingness of the teacher. The earlier lively discussion on the educational and organizational macrostructure

of INSET has lost much of its significance - parallel to the abating of the reform vigor and to the scarcity of funds for the educational sphere. Characteristic for this discussion were demands for minimum INSET capacity, arguments about the optimal organization and arrangement of INSET in the whole system of teacher training, interest in assessments of the desire for in-service training and teachers' satisfaction with in-service training or interest in an empirical classification of the INSET activities offered.

4. Desiderata of INSET in the Federal Republic of Germany

The expansion of the INSET system has been left behind in the face of in-service training desires of the faculty and the needs of a swiftly changing school system. The insufficient supply of in-service training and the lack of teachers in schools do not permit the systematic further training under acceptable learning conditions of each teacher in specific rotation. The supply of space is often insufficient to train so-called multiplicators further, who then are supposed to pass on what they learned in school or in regional work groups to their colleagues.

The accusation heard most often from teachers against INSET is that that which is offered is often not applicable to the school or for actual practice although, on the other hand, the desire for specific subject-oriented or theoretically oriented reinforcement is articulated in the surveys. It is to be assumed that teachers - as long as they cannot regularly and as a matter of course, fall back on offers for further training, expect direct aid for instruction. On the other hand, improved forms of cooperation and feedback between INSET and actual school practice might contribute to a solving of the theory-practice-conflict.

The cooperation of the different INSET institutes among themselves has until now only been effective on the level of individual "Länder", e.g. Bavaria and the Rheinland-Palatinate. On the federal level, there is hardly any contact or exchange of ideas. Exceptions are the sporadic conferences of the directors of state institutes and - more strongly content-oriented, routine work conferences of Catholic INSET institutes. Institutional contacts between INSET institutions and the universities as places for teacher training practically do not

exist - if one disregards the activity of university teachers as speakers at INSET activities. More favorable is the relationship between INSET and institutions for the professional introduction of the teachers (seminars for candidates for the teaching profession, local seminars). In Bremen and Schleswig-Holstein state INSET institutes and institutions for the professional introduction of teachers are organizationally combined. It is still more important that the skilled staff of the seminars for the candidates for the teaching profession and local seminars in all states are among the preferred addressees of INSET institutes.

Part III

Switzerland: The General Situation of In-Service Education and Training of Teachers

1. Introduction

The Swiss educational system is characterized by federalism. The large variety of 25 Swiss cantons distributes responsibility to the individual cantons and communities. They must take over the activities in the sphere of in-service education and training of teachers. Consequently, one cannot ascertain any uniform conception of INSET. Yet two main trends can be discerned: namely, obligatory in-service training and voluntary in-service training. The obligatory training of teachers is based on continual educational innovation. Voluntary training of teachers is an answer to the frequent requests of teachers' associations for in-service training. The forms of realization of both trends are very different: courses, seminars, colloquiums, conversations, research groups - partly in the course of instruction and partly during free time, often in a combined form. At the present time, in-service teacher training is becoming increasingly officious. The education administration and the teachers' associations always view the task of INSET as being of increasing importance.

2. Differing Definitions of "In-Service Training" and "In-Service Education"

The following detailed presentation should be preceded by two definitions.

Definition 1: "In-service training" (recyclage) is the necessary qualification of the teaching staff. It results from the syllabus, the teaching methods and the instructional media. In principle, in-service training is obligatory.

Definition 2: "In-service education" (formation continue) consists in a deepening of basic training and in the

supplements which are necessary. It is a question of a specialization, of an enlargement of knowledge about the school, the spheres of life outside of the school and the general culture. In principle, it is voluntary.

These definitions are not official but they can be observed in all of the Swiss INSET activities.

"Recurrent education has become important in the last few years because one must consider the distinction between school education and education outside of school as outdated - just as one must consider the distinction between the education of youth outside of school and adult education as outdated.

Hence the necessity of regarding the activities of youth and adults outside of school and inside the school in a more general context. From this results a permanent possibility for both to take part in educational processes." (Eugène EGGER et Emile BLANC. L'Enseignement en Suisse, Genève, CDIP, juillet 1974).

In-service education has different goals but is organized along three lines: firstly, it should provide the teachers with an increased competence in school subjects and should help in the renewal of instructional methods and teaching aids. Secondly, it should not only help to renew the individual subjects but also make clear the relationships to other school subjects in an interdisciplinary sense. Herein it expands to a general "psychopédagogie". Thirdly, in-service education should contribute to general school reform. It acquaints the teachers with continuous innovations.

Swiss priorities are set according to current reforms:

a) New mathematics, especially in the primary school sphere (teachers of all subjects)
b) Foreign languages, especially the moving up of the

official language (French or German) to the third, fourth or fifth obligatory school years.

c) New interdisciplinary areas such as environment, ecology.

d) New special disciplines such as data processing, psychology.

These reforms are not based on very detailed innovation strategies of the cantons or of Switzerland as a whole. The cantons provide only general guidelines which are realized by the communities and individual schools. However, an increasing organization and structuring can be observed. This is especially true for specific innovation plans, for instance of regional centers and cantonal agencies.

3. The Responsible Authorities

Responsibility in Switzerland is distributed as follows: The 25 cantons and semi-cantons are responsible for the general school education. The ministries of the federal government are responsible for technical and vocational training as well as for the agricultural and athletic fields. In the area of obligatory school and in that which follows, the respective responsibilities of cantons and federal government vary. This explains the fact that the cantons and the federal government maintain a common in-service training center for upper secondary schools (Centre suisse pour le perfectionnement professionnel des professeurs de l'enseignement secondaire). The head committee is made up of 13 members: 5 represent the cantonal and the entire Swiss authorities, 3 the school directors and 5 the teachers' association of the secondary schools.

In the general obligatory school system the cantonal education ministries guarantee the in-service training of teachers. This responsibility has been taken over by

fifteen of the twenty five cantons.

Aside from the ministries, several teachers' organizations offer training: on the national level by a group called the Swiss society for handcrafts and school reform. It is intended for teachers from the first to the ninth school years. On the regional and cantonal level there is some group initiative on the part of the teachers. The university institutes are often called upon to cooperate. Normally, the educational institutes of the universities are asked.

The information flow between the teachers varies. Some institutes possess individual media. The mentioned Swiss center for in-service teacher training in the upper secondary schools in Lucerne (founded in 1968) has an information service at its disposal which is supported by the official organization of Swiss high school teachers, the "Gymnasium Helveticum".

The inter-cantonal teachers' associations possess reviews which contribute to the spread and elucidation of in-service training resources. Among these are: the "Schweizerische Lehrerzeitung" (Swiss teachers'newspaper), a bi-weekly; "L'Educateur" (The Educator), the newspaper of the teachers' association of French-speaking Switzerland; the "Schweizer Schule" (The Swiss School), the organ of the catholic teachers' association.

Many cantonal centers for in-service training have regular columns in the official bulletins of the ministries.

The evaluation of in-service training activities is now and then the task of education institutes of universities as well as of cantonal research institutions.

The organization of in-service training courses varies from

canton to canton. Different cantons allow for part of the in-service training during school time whereas others are of the opinion that in-service training belongs to the general homework of every teacher and should thus take place outside of the normal working hours.

A special problem is the substitution of the teachers during their in-service training time. These substitutions are handled very differently. There is a tendency to place in-service training in the instruction time and in-service education in the leisure time of the teacher. A general trend to decentralize the courses in in-service education and training and to combine them into regional areas can be observed. This measure supports the contact between instructors and continuous work groups. Recourse is also taken to this measure in order to use local facilities better. The travel of the teachers concerned is thus limited. This decentralization, however, also has one disadvantage: supraregional contacts are increasingly abolished.

Present economic conditions force those responsible in the ministries and in teachers' associations to set precise priorities. Several groups demand the promotion of the concept of in-service education and the cut-back of strongly professionally-oriented in-service training. Ideally, an integrated INSET concept should be found in which the advantages of in-service education components are combined with those of the professionally-oriented in-service training.

A narrower connection between the goals of the school system and those of in-service training is being sought. At the same time, basic training and in-service training should be harmonized more. Ideally, they should be integrated. This integration should be supported by the evaluation of present activities. In a word, the entire area is the object of global considerations which, however, are not yet

realized on the national level.

The investigation of the parallels and differences between in-service training of teachers and the in-service training which has been realized in other fields of economic life also constitute a project in this global study.

Many groups would like the education institutes of the universities to play a greater role in INSET - above all as mediators between theoretical and practical elements. Several teachers' associations have demanded recently that their in-service training be planned on a national level. The main reason for this lies in the previously unused resource of mass media such as radio and television. They cannot be used on the cantonal level since the cantons have only between two hundred thousand and one million inhabitants.

There is agreement where the extremely strict execution of the evaluation of INSET is concerned. The available feedback on in-service teacher training is partial and allows no general judgement.

Section 2: CASE STUDIES

Part IV : Case study 1 :

In-service education and training of teachers during a six-month period

This paper describes a teacher training college founded in Canton Aargau, Switzerland, in 1972, the "Lehramtsschule des Kantons Aargau" (cf. LATTMANN 1975). This establishment follows a model differing in two institutional/organizational and conceptual features from that of the usual applications of teacher training concepts:

a) In contrast to the usual way in which teacher training is organized, the model is not based on the lecture system (1 day courses or courses lasting several days). The training given lasts six months. All teachers of secondary level I may apply, with no age-limit, for leave of absence on full pay to attend the college for six months.

b) This institutional and organizational arrangement has enabled certain new concepts to be tested and new postulates of teaching to be attained. The essential element of the concept in the context of our discussion is the connection established between the teacher's qualifications and his simultaneous participation in curriculum development. It is significant that the teacher's qualifications are not merely related to the enhancement of his professional skill (knowledge). The model to be described in this paper also demands qualifications and enhanced efficiency in areas that lie outside the communication or acquisition of knowledge and concern sundry dimensions of behavior such as readiness and ability to cooperate (especially in teamwork), innovation, communication.

1. General aims

In developing this model the "Lehramtsschule Aargau" set itself certain guiding concepts as general aims. Two of the chief guiding concepts in this context were that of an optimal link between theory and practice, and reference to certain of the results of curricular research in recent years.

The link between theory and practice in this model was not seen as a relationship of two opposed sets of facts but as a supplementary or mutually complementary one. Theory was to help the teacher to master his practical duties and qualify himself for innovatory-minded practice. This aspect may be referred to as the instrumental aspect of theory. But theory was also required to serve the purpose of distancing the practice of his craft from what may be termed the critical aspect of theory. In other words, theory is intended to equip the teacher, on the strength of his specialized knowledge, to describe his own and other people's pedagogical practice appropriately in its specific controversial aspects, to pass it on, to discover its hidden connections, to analyse it and to keep a critical distance for its appreciation. It is also intended, on the other hand, to make him learn to understand theoretical knowledge itself in this manner or initiate and carry out innovations in practice. Practice should be taken to mean the teacher's comportment in the various fields in which he operates. Hence, theory is not to be equated with "remote from practice", nor practice with comportment governed by practicability or passive receptivity.

Besides the fundamental idea of an appropriate ratio of theory to practice in teacher training, there are other important guiding concepts. Above all, knowledge and experience acquired in recent years through the debate on curricula have had their impact on the model's design. The main problem here is how to integrate the teacher into the practical task of curriculum development and evaluation. In a great many projects in German-speaking regions a rather modest role in curriculum development was, in the early days of curricular reform, assigned to those actually operating the system of schooling and education. The teachers were usually cast as executants and producers, or users. The actual task of development and the essential functions were performed by "experts".

In this model, in-service training does not simply mean qualification and enhanced performance in respect of aptitude

for professional expertise. The proper relation of theory and practice and cooperative curricular development implies also cooperation and communication between theoreticians and the teacher in the classroom, and between teachers themselves. It means ability and readiness to innovate; implies critical judgment and acceptance of criticism, open-mindedness and tolerance, and reconsideration of one's own practice. It should also be mentioned that the implementation of these guiding concepts constantly poses new problems and tasks for such an in-service training establishment. These and other guiding notions require a conception of in-service teacher training which differs from the traditional, as regards both institutional and organizational aspects and educational theory.

2. Institutional - organizational aspect of model

The foregoing guiding concepts are reflected in the institutional and organizational aspect of the model. For the first time in Switzerland, and to our knowledge in German-speaking countries abroad, an attempt can now be made on the basis of a far-sighted decision of Government and Parliament to collaborate with teachers of all age groups for a full half year: the Lehramtsschule Aargau can give in-service training to serving teachers possessing 2 to 40 years practical experience. They are released for six months on full pay. The main institutional and organizational specifications in this context may be summarized as follows:

- Each course of in-service training lasts for 20 weeks (1 scholastic half year).
- Enrollment is voluntary and free of charge, with no age limit and no effect on salary.
- Those entitled to enroll are teacher giving instruction or intending to do so, in primary (Primaroberschule) (Hauptschule) or secondary (Realschule) (Sekundarstufe I) schools and registered on the Aargau electoral role as primary schoolteachers.

- Teachers must have a practical teaching experience of 35-60 weeks.
- Successful candidates must undertake, upon termination of the six-months in-service training leave, to teach for at least 3 years in the Sekundarstufe I (6th-10th grades) of Aargau or to pay a corresponding amount towards the training costs.
- Teachers from the various streams of Sekundarstufe I (Hauptschule, Realschule) attend the course collectively and are not separated according to the streams they teach.
- Tuition comprises compulsory and optional subjects, and voluntary specifications.
- The compulsory section relates to training in the theory of education and school practice. It includes pedagogical, psychological and general educational subjects.
- The optional part is sub-divided into a) languages, history and sociology, b) science and technology, c) music and sport
- Every candidate is required to produce a written paper for the seminar.

By this form of institutionalization and organization it is sought to create the preconditions for allowing the guiding concepts mentioned in Section 1 to become operative on the level of educational theory.

3. Educational concept of model

In this chapter will be described the structure of the Lehramtsschule model in respect of content and teaching methods, including the methodological application in the curricular field.

3.1. Areas of content

The content of this educational model (in the broadest sense) can be divided into three areas: educational theory and practice, specialist professional expertise and general education.

The first of these areas is taken to be that of imparting to the teacher knowledge, insight and ability for the purposes of planning, executing and checking the processes of teaching and learning in the light of the factors conditioning them. In short, it concerns the teacher's pedagogical, psychological, didactic and methodological training in general. Training in professional expertise is concerned with professional knowledge against the background of insights derived from the first area, of educational theory and practice, in its classroom application (e.g. by way of transpositions to practical models). The guiding concepts of the optimum possible ratio of theory to practice, and of qualifying the teacher for constructive cooperation in programmes of innovation in the educational system, demand a corresponding curricular application.

3.2. Application of curriculum and methods approach in the educational theory and practice area

What has been chosen as the curriculum and methods approach to the structuring of the training given in accordance with the guiding concepts and overall framework of reference, is not the usual systematised professional approach, but the basic endeavour to orient matters towards the teacher's professional activity (cf. Isenegger 1972).

The approach adopted in the area of educational theory and practice may be said to be activity- and problem-oriented. In the preceding short description of the model used, this approach may best be clarified by comparison with the systematised professional approach. In this, the initial question is: What are the techniques and specializations involved, and what do they have to tell us about the instruction given? In the activity-oriented approach the question is: What does a secondary teacher do in his activity as schoolmaster and educator, or what ought he to do? And: What problems does he encounter in his day-to-day task as

an educator and in theory? Whereas in the first case the answer should elicit the special subjects or disciplines (e.g. developmental psychology, the learning process) or constituent sectors of disciplines (e.g. puberty, motivational teaching), the answer in the second case identifies the teacher's individual activities or problems (e.g. the teacher recognizes specific age-related problems of pupil behaviour in a given situation. Or he prepares slides). Such individual actions are then collocated, in the activity-oriented approach, with fields of activity or problem areas. In this manner 13 such fields or areas have been distinguished for the curriculum in the educational theory and practice area. Briefly, they comprise, for example: identifying and understanding problems of developmental and social psychology in the secondary school pupil. Or: selection and application of educational aids with a view to lesson aims, content and methods. Or: selection, definition and justification of aims and content for secondary stage classes for these particular children.

The selected structuring approach concerns identification of the teacher's educational and classroom activities and problems with a view to formulating corresponding training goals and areas of content. Various considerations arise in this respect. Fundamentally, however, the problems are the same as in the case of a teacher training concept according to the frame of reference to be oriented towards the professional spehre: some of the existing studies and applications are purely methodological. Others go no farther than taking stock of activities and problems, without attempting any correlative discrimination of content and structuring of training techniques. Hence, an endeavour has been made to evolve an activity-oriented structuring approach to training in educational theory and practice that was felt to be most appropriate for the in-service training model and identifying of the goals and content holding out the most promise of innovation-mindedness among the trainees in their classroom practice.

The procedure followed towards attainment of the corresponding goals and content may be summarized as follows: fields of activity are evolved on the basis of a stock-taking of the educational activities of the secondary school teacher. A team of lecturers representative of the chief professional points of interest gets to work on these fields of activity so as to formulate descriptions of goals and content for each with a view to the training course. The lecturers thus establish by teamwork their own curriculum for the ensuing training. They sort out the fields of activity into "teaching packages". Each of these is handled by a lecturer dealing with the whole or a given aspect of it in its specific specialist implications (in some team-teaching is also practised). By means of this approach and mode of procedure (identification, stock-taking, categorization and structuring of activity and problem areas in the teacher's professional sphere, and devising a curriculum arranged according to aims and content), it is hoped that guiding concepts for a professionally relevant, practical teacher training curriculum may be achieved.

3.3. Application to specialized subject teaching area

Because of shortage of time and personnel, a similar structuring approach could not be adopted in respect of specialized teaching. The latter on the whole had to be structured on traditional subject lines. In addition there are a few new areas (in some cases already provided for in the syllabus) such as work studies (sociology), vocational guidance, practical science, sexual education. In some cases these were also taught in "workshops" or in grouped study weeks. However, it has proved possible in these cases too to avoid any structuring according to the conventional principles of specialized subject teaching, inasmuch as these topics are in practice constituent elements of the syllabus for post-primary schools. It is proposed that this area of specialized teaching be organized according to content in the form of grouped or integrated subjects

(cf. e. g. Frey, Häussler 1973) to be taught as a single block in the timetable or during a particular period of time. The subject areas, and teaching and learning arrangements, are shown in Fig. 1.

Fig. 1: Content and organisation of tuition for areas of training

Structure of content (WHAT?)	Organisational structure (HOW?)
Educational theory and practice Structured according to fields of activity and problems (e.g. identifying and understanding developmental and social-psychological processes in post-primary pupils; structuring of syllabus of instruction). 13 areas of activity and problems.	4 x 4 classes a week by 4 lecturers; compulsory classes per area of activity 10-25 hours. Organisation of tuition: - imparting information: large group (e.g. formal lecture, films); - processing information: small groups (e.g. discussion groups, group work, training groups, individual work).
Specialized subjects (e.g. German language lessons in post-primary schools; social studies, creative work) structured by subject	7-12 classes a week; optional area; 2-4 classes a week per subject Organisation of tuition: - imparting information: large group (e.g. formal lectures and discussion) - processing information and specialist application: group work (e.g. evolving educational aids, lesson units) - trial in existing school situation
General situation (e.g. literature, history, educational research, pedagogical anthroplogy)	2-6 classes a week Organisation of tuition: - formal lectures - "workshops"

3.4. The teaching methods procedure

These guiding notions and the professionally-oriented framework which governed the development of the overall concept as outlined, also produced a corresponding internal structuring of teaching, a particular kind of teaching methods procedure. This may be termed the Three Step Principle. It consists of three elements:

- Theoretical elaboration
- Transposition in terms of practical teaching or specialized teaching
- Application and testing

This principle provides at a first stage for the lecturers to work out with the trainees the specialized subject matter involved in each case in both the educational theory and practice and the specialized subject areas. This means that in, say, the area of practical training for the activity "organizing social forms in post-primary teaching", first of all a survey is made of the various social forms, including knowledge of their educational significance, conditions, forms etc. The second step is to work out the practical effects or the application of the knowledge to post-primary teaching. This may be done by e.g. producing data sheets with instructions for group tuition, schemes of analysis or observation sheets for comments and appreciation of the group tuition as a whole to apply this elaborated knowledge, or to try it out in practice. For instance, the procedure may be to carry out group tuition at the Lehramtsschule itself, with post-primary pupils and to video-record the classes. The tuition may then be discussed by means of the telerecording and the observational documentation. The three-step principle should be applied similarly to specialized subject lessons. For example, for the grouped topic "Heat and cold in Man and Nature", the first step is to prepare the necessary specialized documentation. Next, this is transposed to the special subject teaching by means of the

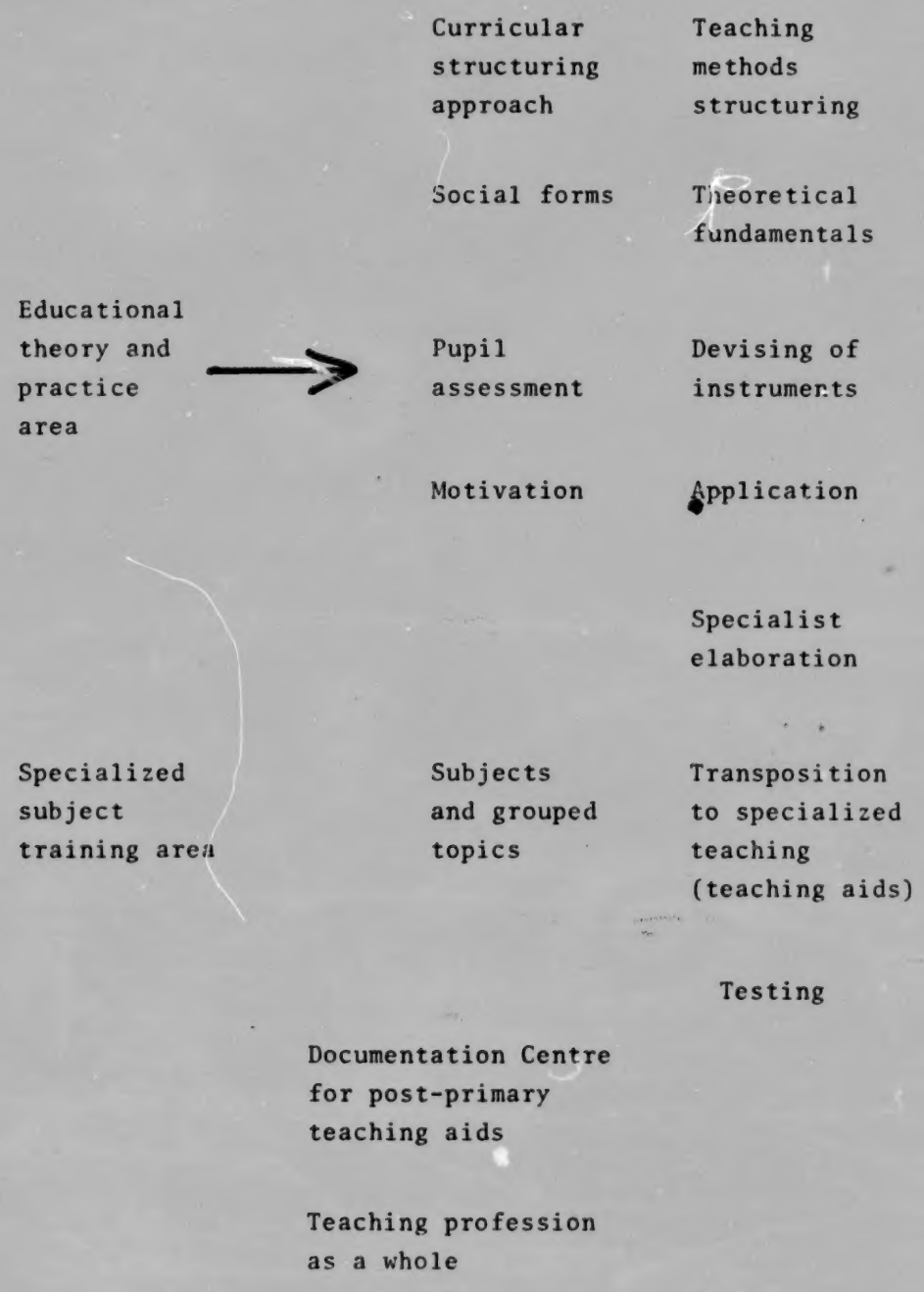
course participants elaborating the material in group discussions supervised by the lecturers, so that the end result will, ideally, take the form of instructional aids for both teachers and pupils; i.e. complete teaching-units, single work-sheets, outline lessons, sheets, etc. Lastly, in the application step care is taken that these aids are applied whenever possible and their efficacy is tested in actual teaching situations. The Three Step Principle method of tuition is shown in Fig. 2.

3.5. Gearing of training to educational theory and practice, specialized subjects and specialist lessons

By the curricular method approach (fields of activity and grouped topics) and the Three Step Principle method of tuition, it has been possible in both areas to arrive at a further guiding notion for the overall concept: the best possible gearing of training in educational theory and practice, specialized subject matter and specialist teaching. Our teacher training system indeed shows that by the (occasionally necessary) personal separation between training in the psychology of teaching and in teaching methods on the one hand (e.g. teachers of pedagogy, psychology, methods, class teachers) and training in specialized subject matter and lessons on the other, there may occur duplications, poor coordination and various kinds of conflict situations. The gearing of specialized subject matter and teaching training has already been explained by the previously described teaching method process, more especially the specialist "transpositon". An essential intermediate gearing point between educational theory and practice and specialist training lies in the field of "specialist transpositon". The aim is to apply the knowledge acquired in the educational theory and practice area by such transposition. This is rendered possible, and easier, by the instruments of application that have been worked out in that connection. Thus, for example,

the data sheets, diagrams and so forth, should provide suggestions for the preparation of lessons and development of teaching aids. (i.e. where techniques for identifying and establishing aims and content have been achieved in, say, the activity "Identifying and establishing tuition aims and content", they may be of assistance when it comes to evolving a unit of instruction in the phase of discovering and establishing aims). Another gearing point is at the third step, of application and testing, in the specialized subject training. For testing particular teaching aids, the instruments devised in the educational theory and practice area may be used for observation and analysis. (Thus, for example, the observation sheets and analytical diagrams produced in the activity "social forms" for the purposes of group instruction may be used for trying out a lesson or lesson element using group instruction as an aid in observation and analysis). Such application of instruments not only furnishes useful repetition and more detailed treatment, but may also have a feedback effect from practical experience upon the educational process, thus enabling the instruments (and theory teaching) to be overhauled and improved upon. Such interaction between educational theory and practice and specialist training is likewise represented in Fig. 2.

Fig. 2: Gearing of areas of training



3.6. Teaching aids documentation centre

One essential element of the in-service training model discussed here in relation to the process of scholastic innovation is the teaching aids ducumentation centre. As shown by Fig. 2 and the explanation of the structuring of the method of instruction, teaching aids for daily classroom use are devised under the guidance of the lecturers on the basis of knowledge gained in the educational theory and practice training area from the broad scholastic experience of participants and the elaborated specialist teaching material. After testing (step 3), these aids are collected together at the post-primary teaching aids documentation centre. Here they are at the disposal of any teacher who may be interested. By means of a reporting system experience in the practical use of these aids is pooled. The object is, wherever possible, to experiment with some of these aids in existing classroom situations. In such cases a report may accompany them. But to secure the greatest possible teacher collaboration and to encourage more and more of them to pool their experiences, the documentation is assembled at the post-primary teaching aids documentation centre and then made accessible to all teachers. As can be seen from Fig. 2 an attempt is made to include even teachers who do not attend the Lehramtsschule, i.e. not only written work from particular courses at the college, but also that of teachers in other branches of post-primary education, as well as other material is collected by the centre. Thus, under these guiding concepts, a favourable cooperation between the college and the association of teachers in intermediate and secondary schools has grown up. In Canton Aargau various groups of intermediate and secondary schools had often suggested setting up some kind of documentation centre for working aids (work sheet centre) to faciliate and promote teamwork and the mutual exchange of experience. This proves that many teachers often devote untold hours of work to collecting documentation and producing sets of

exercises, work sheets, projector slides, etc. for particular topics. Many would wish to extend such aids to their fellow-teachers, and would be prepared to pass on the documentary material once it has been processed. But in most cases suitable arrangements, and the motivation, are lacking. Misgivings are also felt about professional competence.

With the aid of its own information bulletin the idea is to integrate all teachers, in a twofold sense: first, the bulletin (issued at intervals of 3-8 weeks and supplied gratis to all post-primary teachers) gives current information on the work of the centre and appeals for active cooperation in producing it. Secondly the bulletin and its feedback mechanism should be primed by classroom experience. That is, the material circulated by the centre ought not to be simply accepted and applied by the teacher without any further thought. Teachers are invited to pass on their own experiences (impressions, experiences, opinions, corrections, additions, etc.) to the centre, which conveys it to the authors of the bulletin. Such information is then incorporated in a new version. Thus the material is given a further, albeit unsupervised, testing in classroom conditions. In this way the function of the documentation centre becomes clear: it serves, by means of the instructional aids it publishes, to alleviate the day-to-day teaching and classwork of the secondary school teachers, promotes cooperation and discussion among them, opens their minds to curricular reform understood as a continuing process for a constantly improved tuition (coresponding to actual conditions) and in this way enhances willingness to innovate. Moreover, this constant process of improvement by way of feedback from practice will also prevent the material from encouraging a passive attitude. The material is considered as a pool of information for the class teacher. It should enrich the tuition and facilitate the teaching. These educational aids will never form part of any official syllabus (cf. Aregger, Lattmann 1974)

4. Experience, problems and first consequences

For several reasons, it has not yet been possible to evaluate the model described in the preceding sections by way of concomitant expert investigations. Therefore a few remarks may be proffered in conclusion, based on experience and observation.
By winter 1975, there were circa 200 participants, attending 7 courses. Great interest is shown, acceptance depends on certain criteria, e.g. number of teaching years, number of applications from one district, cf. paragraph 2.

As regards the institutional and organizational dimension of the model, it may be noted that in-service teacher training in the form of a longer (quarter to half a year) paid leave for teachers with several years or decades of service produces rewarding results from various standpoints.

The model appears to represent a favourable concept from the standpoint of the guiding notion of an appropriate mixture of theory and practice. In particular, the activity- and problem-oriented structuring approach in the educational theory and practice area is generally described as being effective in this respect. The same applies to the three-step principle of structuring of teaching methods, especially in the specialized subject teaching area in respect of transposition of the elaborated specialized knowledge. In the classroom teaching area this three-step principle has not yet been sufficiently put into practice. Nor has the gearing of training in educational theory and practice and in specialized teaching on the basis of the instruments evolved in classroom practice been fully accomplished as yet. The path to such gearing seems to be chiefly attained through internal lecturer-seminars.

Experience has shown that guiding concepts relating rather to emotional and social attitudes and feelings are more difficult to achieve than those relating to the acquisition

or preparation of knowledge. It is found that trainees begin by imagining themselves too vividly in the role of pupils and assume types of behaviour which correspond to their own schooldays and current practice, and this may be described as a rather passive type of participation. This tendency is reinforced in that many trainees deliberately wish to attend the college with a view to "getting tanked up again", "gaining fresh incentives", etc. It takes a few weeks to break down a certain reserve in them. The reason probably is that trainees tend to overemphasize "theory" and expect too much from it, without in many cases being prepared to establish the theoretical basis of a corresponding situation where the practicability of the material to be learnt is not immediately apparent. Nevertheless, the frequency and variability of the possibility of interactions provided by the college and group work according to papers and projects by trainees ensure that, on the one hand, the teachers upon returning to their scholastic duties go in for more group work, or would like to do so, with their own pupils, and, on the other: they prepare, or would like to prepare, their own teaching as a team. Hence a large proportion of the trainees shows greater receptivity to theory and willingness to cooperate with experts, together with a more open-minded willingness for interaction with the pupils' and their parents' interests and requirements.

The following provisional general conclusions may be drawn:

1) A strategy of innovation, integrating cooperation in curriculum formation and a corresponding qualification and participation of teaching staff, from the present-day standpoint probably forms an optional potentiality for renewal and improvement of school and tuition. The most effective, as regards both quality and quantity of output and integration of teachers, would certainly be that form of organization in which the teacher, after several years' service, is able to take in-training paid leave, e.g. (periodically) for six to twelve months in

order to acquire suitable qualifications and to take part in the development of the scheme in various functions and stages of the curriculum. This involves an institution such as a regional educational centre also assuming responsibility for the project-tied advanced training of all teachers (of a given stage, area of education, etc.) so that every teacher, and not just those on in-service training leave of absence, is able to take part in the reform. Such an optimal link-up of refresher courses and output of material is only possible where both elements form constituent features of a concept of content and organization as exhibited by the Lehramts-schule model.

2) It ought to be considered whether this form of refresher and advanced training should not replace the usual in-service training comprising half-day, whole-day and several days' courses. That is, in addition to such an institution, other conferences should also be held with the object of evoking reflection, pooling of experience and promotion of professional solidarity. However, specialist refresher and advanced courses should for the most part be held at this kind of institution.

3) Besides the actual in-service training, the institutions ought also to take over further training functions such as training courses for various teaching qualifications (e.g. development of teaching aids, cooperation in curriculum formation), for specific tasks in the educational system (e.g. teacher-counsellor, inspector, classroom teacher), and for qualifying existing stages of schooling and kinds of school.

Part V : Case study 2 :

In-service education and training of teachers and scholastic reform

1. Start of training with respect to scholastic policy

From 1968 compulsory schooling for grades 7-10 in a differential form, with three different kinds of school, was partly converted in West Berlin to an integrated form (comprehensive).

The framework requirements for a successful demonstration of the comprehensive school system have been described in sundry publications by educationalists and training authorities (e.g. the Deutscher Bildungsrat (German Education Council)): a school building allowing of flexible groupings, equipment in teaching and learning aids, encouraging independent study by the pupil, a detailed and yet amendable curriculum, aids for the learning goal-related differentiation of pupils (tests, instructional data), and lastly, teachers adequately trained for the special duties required in a comprehensive system.

These standards had to be observed at the time of the Berlin education authority's decision in 1970 to establish 17 new comprehensive schools for grades 7-10, including 13 prefabricated element buildings (to house 1,200 pupils). A decision for new school buildings was made necessary by the upward trend in the size of the school population, with a bulge in the intermediate stage (grades 7-10) of about 51,000 in 1970 and 89,000 in 1977. The significance of the educational policy planning lay in the decision to design all new schools as comprehensive on an equal footing with those of the old three-type (Hauptschule, Realschule, Gymnasium) system. Innovation on such a massive scale - at the completion of the building programme comprehensive schools will account for 30% of all pupils at the intermediate stage - had to be backed by timely support measures more especially in respect of teaching personnel.

2. Situation of teachers

Posts in comprehensive schools are filled on a voluntary basis. All teachers are put through a two-phased basic training (Phase one, age groups 19-23, 3-4 years study with emphasis on specialized teaching and techniques ; Phase two, age groups 23-24, 2 years, mainly school practice). In accordance with the structure of the traditional educational system this training is oriented towards the different kinds of schools, but as the comprehensive system grows it will have to become stage-oriented (primary stage, grades 1-6, secondary stage I, grades 7-10, secondary stage II, grades 11-13). In Berlin and other federal Länder the amended structure is being prepared in respect of content, legal constitution and oragnization. As the comprehensive school system differs from other types of school mainly in the integration of the intermediate stage (grades 7-10), the area of secondary stage I has to be reorganized.

Only very few teachers are familiar with the special problems of comprehensive schools; many teachers completed their college before these were ever even seriously discussed. With the introduction of the new school system they will now have to encounter many problems, the solution for which even senior staff are lacking in any kind of experience: they will be plunged into a controversy over teaching methods that will be particularly heated in comprehensive schools. They will be called upon to give instruction in heterogeneous groups while still enabling or inducing differentiated and individualized learning processes, to set tests and evaluate their results for pupil-grading purposes and undertake pupil-counselling functions in a school in which social contacts between pupils, and between staff and pupils, will be important as the old class boundaries are broken down.

3. Preparation of teachers and curriculum development

From what has gone before, there are two main foci for the preparatory and concomitant planning of the comprehensive school project:

- development of curricula answering the aims of the comprehensive school (e.g. identical set of aims for all pupils in secondary stage I)
- intensive further training for teachers.

The host of investigations into suitable forms of curriculum and successful models of curricular development have certainly not brought about any generally accepted theories, but have nevertheless produced knowledge of great importance of the innovation project issue: curricula only become effective if they are properly related to school and teaching practice and incorporate the task of development and revision of as many of the teachers as possible using the curricula.

These were the arguments for linking curricular development with in-service teacher training. Three years before the first of the new comprehensive schools was opened in 1974, a small number of teachers were assigned the task of screening the curricular data already available in the schools, arranging for exchanges between schools, and preparing the way for development of curricula and unit syllabuses for the comprehensive school. The teachers in this "curriculum group" still continued teaching four lessons a week in their schools in order not to loose touch with classroom practice. Their chief task was, first of all, to institutionalize at a professional level inter-school coordination and cooperation through regular meetings of specialist group leaders and other interested teachers. Such cooperation progressively led in due course to a pooling of target and curricula planning. The incorporation of teachers was greatly strengthened by a seminar project (direct in-service teacher training) that

appreciably supplemented the curriculum project: between 1973 and 1976 there will have been held 11 weeks of teacher preparation seminars for those starting service in one of the new schools during the coming academic year. At these seminars a connexion was formed between active participation in curriculum development and psychological and pedagogic preparation for what were in some cases new kinds of duties in comprehensive schools.

4. Resources and teacher participation

Funds are placed at the disposal of teachers in the curriculum group who have been released from teaching duties (since the end of the planning phase they have been ten in number) to cover the costs of the necessary technical work (typing and printing), consumer materials (paper, slides, etc.) the purchase of teaching material for testing, and to finance contracts (elaboration of curriculum material, graphic work, etc.). As a model experiment of supra-regional importance, the project has been given a four-year grant from the Federal Ministry of Education and Science through the Federation-Länder Commission amounting to approximately DM 100,000 per annum.

The seminar project, likewise declared to be a model experiment, also receives extensive support of about DM 170,000 a year. All members of the curriculum group lecture at the Pädagogischen Zentrum, Berlin, which thus affords them further aid in personnel and finance.

About 120 teachers take part in each seminar. The fact that teachers can be allowed up to 18 hours of free periods a week is a peculiarity to Berlin. Several years ago the start of the school year in the Federal Republic of Germany was shifted from April to August. Berlin was the only federal "land" which did not take over the new system entirely. At that time this arrangement only applied to school beginners. Hence up to 1976 there is from April to August a surplus of lesson-time corresponding to one whole year's schooling.

5. Organization of in-service training seminars

The seminars are characterised by three different groups of function:

- General
- Extra-curricular
- Curricular.

The general function seminars take up to three whole days, and mainly serve to provide a review of the various aspects of the innovation project: the comprehensive school concept in scholastic policy, organizational changes in the schools (block teaching, differentiation), standardized building design, curricular development and the like.

At the extra-curricular function seminars (in all, about 3 full days and 6 half days per three week period) four topics are debated: socio-psychological youth problems, tutorial and counselling system in comprehensive schools, free periods in comprehensive schools (all new schools are designed for full-time working) and interaction problems in comprehensive schools . The subjects, still offered at the first seminar: "measurement of performance and use of media" have in subsequent years been postponed due to criticisms raised by participants at the curricular function seminars. It had been proved that these subjects could be better dealt with in the context of the content of specialist teaching. The original concept of allowing each participant a choice of emphasis among the subjects offered was similarly modified in favour of a programme providing for teacher participation at all courses, so that each topic would take about 1 1/2 days.

Midway in the overall teacher-training come the curricular functions, lasting about 8 weeks at 1 1/2 days a week. These are related to the different subjects and are conducted by the teachers of the curriculum group.

6. Curricular functions e.g. Sciences

Work at the specialized curricular function seminars is characterized by:

a) common aims for all subjects
b) the objective of teacher participation in planning
c) the objective of producing teacher-oriented curricula
d) specialist requirements (initial position in curriculum, specialist teaching aids, importance of supply of teaching aids) which modify the course of each individual function.

The most concrete possible presentation of this part of the seminar therefore has to be limited to one specialized area, and so mark its characteristic difference from the others.

The timing of the overall project also determines the emphasis in respect of content at each phase of training. The curriculum group began to operate in 1971, the first seminar was held in 1973 and in 1974-75 the comprehensive schools were opened, at 7th grade. This led to the following planning concept: during the two years prior to the first seminar, decisions had to be prepared concerning the principles of content for the post-primary stage as a whole, draft curricula for 7th grade and the equipping of the schools with teaching and learning aids. At the seminar itself the decisions could then be taken, and alterations made in the proposed curricula. At subsequent seminars the work prepared and supported by the curriculum group predominantly concerned the next grade upwards. The following diagram shows the timetable for the various phases, in principle applicable to all the specializations represented at the seminar.

	1971	1972	1973	1974	1975
Curriculum group	Preparation of decisions on principles of content for intermediate stage, elaboration of drafts for 7th grade. Elaboration of proposals for the equipping with teaching and learning aids, counselling on school building.		Management of seminar, examination of results, draft syllabuses and establishment of curricula for 8th grade.	Management of seminar, evaluation of results, draft syllabuses and establishment of curricula for 9th grade. Observation of first trial of curricula for 7th grade.	Management of seminar, evaluation of results, draft syllabuses and establishment of curricula for 10th grade. Observation of first trial of curricula for 8th grade. Inception of review of curriculum for 7th grade.
Seminar			Decisions on principles of content for intermediate stage and syllabuses for 7th grade, amendment of curricula for 7th grade. Decisions on supply of teaching and learning aids.	Decisions on syllabuses for 8th grade, amendment of draft curricula and elaboration of a tuition unit for 8th grade, preparation of tuition in 7th grade.	Decisions on syllabuses for 9th grade, amendment of draft curricula and elaboration of a tuition unit for 9th grade, preparation of tuition in 7th and 8th grades.
Schools				First trial of curricula for 7th grade.	First trial of curricula for 8th grade. Second trial of curricula for 7th grade.

6.1. Defining content of in-service training seminars in the science area

The actual form given to the content of the seminar based on this diagram is modelled on the example of the science subjects (especially physics and chemistry). In addition a closer look was taken at two project phases, a description and comparison of which will clarify the whole course of the project: the start of the seminar (in 1973) and the period for the first feedback from classroom practice (in 1975).

During the two years previous to the first seminar under coordination with the lecturer of the curriculum group responsible for structuring the preparatory work for the seminar were agreed among representatives of the specialist groups of already existing comprehensive schools and members of the planning groups for the new ones:

- decision on a spiral curriculum
- choice of the topics "Heat" and "Electric circuits" for the 7th grade
- decision on a type of science teaching attaching considerable importance to laboratory experiments by pupils, with, in consequence:
- compilation of a catalogue of teaching aids for basic equipment, mainly comprising apparatus for pupil experiments
- decision on inclusion in syllabus of integrated projects.

In accordance with these agreements, material has been elaborated under paid contracts by various individuals, or groups of teachers, and is then submitted to those taking part in the seminar for discussion and further treatment. Modification of curricular proposals has been a major feature of the seminar. But even more important, at the first seminar fundamental aims were agreed upon, "guiding concepts" for science teaching to serve as a foundation for subsequent planning studies. Various problematic areas of science teaching were consigned to a third

group of topics, so that the subject matter (though not the whole organization!) was divided into three parts:

- compiling a list of basic aims of science teaching in the comprehensive school,
- discussing and elaborating curricular documentation and constructive planning of tuition,
- elaborating on various topics: measurement of performance, differentiation, equipment, etc.

6.2. Identifying and defining goals for science teaching

A list of basic aims has to fulfill a twofold purpose: designation of criteria of selection for the composition of the syllabus, and providing a framework of orientation for decisions on detailed planning as might become necessary in transposing the syllabus to a concrete teaching timetable. Following the example of similar functions of the Institut für die Pädagogik der Naturwissenschaften (Institute for Science Education), (IPN), Kiel and with assistance of members of IPN's staff, a procedure was chosen that should ensure the participation of a great many teachers: definitions of aims were culled from many sources (textbooks, syllabuses, teaching units) and discussed and classified in respect of their content. Each participant was then instructed to place about 40 aims in order of preference, according to his own estimation, by the criterion of importance to the comprehensive school. The list of preferred aims was finally pronounced upon in a forum of school and planning group delegates.

In the course leader's view, it was exceedingly important for the efficacy of this procedure to divide participants into small groups and instruct them to attach the most weight to the aims that had been deemed important by the greatest possible number of members of the small groups. The small group afforded an opportunity of defending one's views without the possibly self-imposed reticence one would have in a larger

group of colleagues, and of giving examples to support this point of view. The compulsion of arriving at a unanimous vote resulted in intensive discussions in which very often there ensued a withdrawal from a stance adopted earlier. In this way many teachers had their first opportunity of talking over basic teaching questions with colleagues, not in the academic seclusion of the university but against a background of shared practical classroom experience.

It is not surprising therefore, that aims were identified in more measured terms than is usual im preambles to agreements. Formal educational values, forces making for mental growth and disciplinary effects were hardly attributed to science teaching any longer, but instead a very modest view was taken of the possible effects of subject teaching. It was hoped, and declared to be an attainable goal, that the pupil could be helped towards gaining an understanding of the scientific and technological environment, some degree of insight into certain technical equipment, more knowledge of the scientific and technological background of open debates (e.g. on nuclear plants) or incentives to the pursuit of hobbies. Besides these environment-related aims, others were adopted which break away more sharply from the framework of traditional science teaching: explaining the mutual relationship between scientific and technological developments and social changes is, in the opinion of many teachers, indispensable in any list of goals.

6.3. Discussion and elaboration of curricular documentation; constructive planning of lessons

Even in an 8-week seminar, with about 12 hours a week for discussions, it is possible only to a limited extent, because of the multiplicity of topics, to produce any detailed constructive planning of teaching. It has been proved that the time between planning sessions (preferably in small groups

of not more than two or three teachers) ought not to be too brief if the necessary study of the literature, consultation of sources and obtaining of material and technical studies (drawings, typing, duplications) are not conducted under pressure of time. As a rule, therefore, only a single topic has been selected for this kind of study.

On the other hand, the discussion and elaboration of curricular documentation is a simpler matter. Teachers having worked on the documentation present the main group with an outline of their intentions, sub topics, methodological preferences and media. More difficult experiments are conducted. Those who fail to agree with certain parts of the discussion assemble in small groups and work out alternative proposals. The discussions on methodological and teaching problems made it clear that curricular planning is all the more open to criticism the more detailed its presentation can be. Hence criticism is often levelled at sections which are regarded, at least by the planners, as of minor importance: allocation of time, organization of experiments, blackboard work, supply of apparatus. This may inhibit critical assessment and realistic discussion of teaching concepts. Allowing, too, for the fact that more senior teachers sometimes resent it if over-detailed proposals are presented to them, the planning has often, as time has gone on, been conducted more openly.

From all the criticism raised at the seminar it may be assumed that collection of material for use as teaching aids is more suitable than written discriptions of a possible scheme of tuition. This tallies with the results of theoretical analyses of "closed" and "open-ended" curricula.

6.4. Review of the Seminar

The following summary indicates topics, working procedure and origin of function leaders/staff. Each topic required half a day.

1. Discussion of timetable, propounding of alternatives. Presentation and discussion of views on teaching which determined preparatory work on curriculum and influenced draft timescale.

2. Presentation of experience at a known comprehensive school in respect of drafting, planning, execution, evaluation and revision of a curriculum with the teaching staff of a school. Staffing, equipment, and organizational requirements. Theory and practice of test procedures used. Lecture, study of equipment, exercises with specimen tests. - Teachers of the comprehensive school concerned.

3. Presentation of concepts and discussion of problems of three possible integrated teaching units: a) Environmental protection, b) Plants need water, c) Observations and measurements of human body. Discussion of documentation. Decision on one of the projects for further treatment during remainder of seminar. - Teachers from the various schools having produced the documentation.

4. Transposition of guidelines for teachers to practical instruction on the lines of some of the IPN teaching units. Lecture with study of equipment and debate.
   - IPN staff.

5. Presentation of a target level model and implementation of a procedure for identifying goals for science teaching in the comprehensive school. Work in groups of varying composition.
   - IPN staff

6. Evaluation and presentation of working results of Day 5. Discussion on applying highly favoured science learning aims to teaching units of individual science subjects.

7. Continuance of procedure started on Day 5, this time with the aim achieving learning aims in Physics, Chemistry and

Biology which are in a certain order of importance and tailored to timescale, for work in the comprehensive schools. - Separate specialist groups and conferences, study in small groups.

8.a. The IPN concept of chemistry teaching - IPN staff.

b. Work on documentation for a teaching unit "Heat" for Physics teaching in 7th grade. - Teachers from comprehensive schools having already taught this subject on the above lines.

9. Work on integrated project. Small groups

10. Work on integrated project. Small groups.

11.a. Work in a teaching unit on the topic "Electricity". Discussion and amendment of documentation. - Teachers who prepared documentation.

b. Work for a teaching unit for starting classes in chemistry (distinguishing characteristics of kinds of substance). Study of literature and equipment presented, joint overall planning. Work in small groups: supply of pupil working equipment, teacher technical information, comments on teaching method. Testing of proposals for experiment taken from the literature. Production of a model for internal differentiation of teaching unit, setting up of learning checks.

12. Work on integrated project. - Small groups

13. Work on teaching unit "Heat". - Teachers having worked on documentation. Further work on chemistry starting unit.

14. Measurement of performance in science (experimental) teaching. Lecture and discussion of examples using different approaches, from Berlin comprehensives. - Staff of comprehensive schools at which objectivised measurement of performance has been

conducted. - Lecturer from Pädagogisches Zentrum (diagnosis of methods).

15. Final work on specialized subjects and integrated teaching unit.

16. Design and discussion of building plans. Installation and equipment of science department. Groups of varying composition (specialized subjects and overall). - Teachers having worked on list of equipment proposals.

17. Social behaviour in science teaching; presentation of aims and procedures for achieving them, using examples from IPN curriculum; working out corresponding aids for curriculum of comprehensive schools. - IPN staff, lecturers from Pädagogisches Zentrum.

6.5. Follow-up seminar

In subsequent seminars the topics had to be altered, in that fundamental decisions no longer had to be taken on content and organizational form of teaching - the earliest schools had already opened - but a large amount of teaching material that evolved in the meantime remained to be discussed and dealt with. Induction into intentions, principles of method and technical problems for the testing of curricular documentation therefore constituted an obvious focus for the work of the seminar. Another was the choice of timing within the overall project timescale: determining topics (as proposals to be put up to the administration) and devising a teaching unit for the next annual intake. For the 1975 seminar the following planning structure applies (physics): Discussion, elaboration and technical trials of curricular documentation for 7th to 9th grades (10 teaching units in all): some 11 seminar lessons; choice of topics for 10th grade: one session; construction work on a teaching unit (energy): some 5 sessions; elaboration of various cognate topics (equipment, differentiation, compulsory lessons, etc.): some 5 sessions.

7. Cooperation among teachers; supply of lecturers

At all seminars it was once again noted that the teachers considered themselves fully au fait for questions of timetable planning and instruction, and according to their understanding of methods and preparation of lessons this was usually the case. The assignment to lecturers coming from, say, higher education of leadership and counselling functions is therefore fraught with problems, especially as many teachers had during their practical classroom work developed a marked aversion to "educational theoreticians". Hence it proves more fruitful to invite teachers who are at least still part time practicing teachers and have shown special ability in a given area of relevance. Lastly, this mode of procedure clarifies the dislocation between actual classroom experience and educational theory. The latter hardly comes into the planning picture at all in a curricular development project with no available room for experiment but tied to a hard-and-fast timescale and broadly applicable results.

For the teachers, the broadening of their horizon by cooperation with practising colleagues is the chief gain. This is one of the most important findings of the seminars and for their preparation thereafter: regardless of what the appraisal of the teaching quality of the curricular product may turn out to be, the teachers derive the actual benefit of instructionalized in-service training in the framework of a development project from their awareness of having to reflect upon their practice hithero for discussion with colleagues, and noticing what effects such reflexion can have on their activity as teachers.

Of course, in teaching topics that only become of prime importance to the teacher in the case of the new schools, it is not possible to dispense with expert opinion. Areas demanding expertise have been: differentiation, measurement of performance in the context of differentiation, and aspects of social integration in science teaching. Lecturers (members of staff of the Pädagogisches Zentrum, IPN and the universities) were required to counter the teachers' critical attitude by giving a practice-related bias to their subjects and conducting open seminar discussion: short lectures, suggestions for discussion,

distributions of letter-press concerning school practice prior to the function, open-ended time schedules, delegation of leadership to participants, and the like.

It is necessary to mention that the procedure for achieving aims and content as described for science subjects was not applicable to all specialized subjects. A teacher-oriented approach had to be particularly really adoptable where given principles of content are non-controversial, where at any rate some basic problems of teaching and methods may be considered to have been solved, and where owing to the foregoing concrete structure, the quantity of possible alternatives to an educational concept is not too great. In other subjects (e.g. those whose objective carries implications for policy-making), clearer directives must be given by the administration so as to facilitate the formation of a consensus and ensure that the teachers' efforts to reach decisions do not remain seminar exercises, which are not taken seriously by those with whom policy-making responsibility for educational syllabuses must rest.

Part VI : Case study 3 :

In-service education and training of teachers and curricular reform

1. Initial Situation

A brief description will now be given of a project started in December 1972. Its subject was reform of the curricula for handcrafts (textile design) and home economics teaching.

The former is firmly implanted in the primary and secondary stage. The latter is limited to the secondary stage (in this case, 6th to 9th grades). The reform project is a response to the initiative of both cantonal inspectors of schools at headquarters. They appointed two part-time scientific consultants able to be on call for servicing the project for several years. The project covers Canton Lucerne, Switzerland. Instruction in handcrafts and home economics is exclusively given by specialist women teachers. Altogether there are about 220 handcrafts instructors and 100 home economics teachers.

The instructors concerned in the project bear sole responsibility for the specialist teaching aspect of the project. 11 work groups have been engaged on the project since January 1974, with a combined working session once every two weeks. The groups include on the average - 7 persons (4 teachers, 2 district inspectors - also practising teachers but detached on special duties - and one training instructress). The teachers and district inspectors have had the same training: 3 years at a college of education. This is a professional training college with a post-secondary stage intake. Students are aged 17 to 20.

The emphasis in training is on practical training for future teachers. Theoretical background information and theory-based critical reflexion on one's own practice are seldom included. All the lecturers have been practising teachers themselves, having acquired exceptional service qualifications and taken advanced training to reach what are still the current standards for promotion to lectureship.

Already prior to the start of the project, the project consultants had been able to gain experience of the handcrafts and home economics teachers' standard of knowledge at advanced training courses in curricular theory. The relatively low standard set for the problems of educational theory evoked a general consensus among trainees that intensive further training must be given before new subjects are added to the curriculum.

The remainder of this report is divided into 4 parts:

(2) Principles of reform as determining factors in in-service teacher training
(3) Schedule of in-service training course or project work
(4) Institutional framework of in-service training
(5) Interim evaluation of in-service training

2. Principles of Reform as Determining Factors in In-Service Training

Before the start of the reform project - together with the project aims (cf. AREGGER, LATTMANN 1975, 59-61), a great many principles were discussed which are to be observed in the course of reform. They chiefly comprised considerations arising from the results of innovation theory as well as views which in some cases were relevatory of the participants' attitude toward educational and social theory.

(1) Queries about curriculum theory are taken as the starting point for the reform. Analysis of goals and content takes priority over changes in the external structure of educational organization (timetable, technical equipment, types of schools, etc.). This principle is aimed at latching on to the teachers' current classroom practice.
(2) Emphasis on implementation: The desired curriculum reform is not merely a matter of adapting a syllabus to a curriculum or working out a new curriculum. Besides prepa-

ration of a document (e.g. compilation of teaching units, draft curriculum) various conditions that have to be fulfilled in carrying out instruction (e.g. teacher training, advanced teacher training, supervisory system, teaching media and aids) are analyzed and amended. The object is to create an adequate context for future implementation of the curriculum.

(3) Teacher-centered approach: Analysis based on curricular researches has shown that syllabuses are likely to be held in less esteem if compiled by a small group and then given official approval than if numerous teachers have a say in compiling them. The prevailing practice in Europe hitherto of drawing up syllabuses without consulting the teacher is regarded as a defect of educational policy (cf. HÜFNER 1973, 114). In teacher-centered curriculum development a substantial portion (e.g. one quarter or more) of the teachers concerned is, typically, firmly integrated in the projected reform. That is, that proportion of the entire teaching staff is actively participating in the results achieved. The rest of the profession is kept in touch with the project by a permanent exchange of information (circulars, taking part in tests, conversation with colleagues, regional and central advanced training courses, etc.).

(4) Upgrading qualifications of all participants: In the teacher-centered curriculum project with built in mutual exchange of information, success largely depends on the qualification of those taking part. Hence, on the one hand, the whole of in-service training for teachers is slanted towards the reform project. On the other hand, it is linked to the project studies (in this case through participants drawn from the teaching staff of the College of Education and the collaboration of student-teachers). Overall, various forms of teachers' and student organizations are involved (cf. also Section 3).

(5) Medium-term intensive phase: It has been found from other teacher-centered projects that the actual effects are not

felt until a few years later (cf. FREY 1974). By effects we mean modification of the instruction given, not just publication of, say, a new syllabus, portion of curriculum or theoretical project report. Therefore, the reform project is designed to enter into what is termed an intensive phase in the medium term (in 8 years time). By then all necessary measures for a durable and systematic innovation will have been evolved, tested and institutionalized.

(6) Reform of reform: A thorough-going reform of a school subject, group of subjects or a whole school cannot be anticipated in full detail for several years. Project aims, principles, conditions, theoretical assumptions and concepts themselves also behave as variables capable of evolving or being modified in the course of a project. It is, in consequence, necessary to find a dynamic project configuration. In this way suitable organizational features can be built into it to feed automatic innovation to the school. It is presumed that the school can thus progressively measure up to its tasks of controlling and shaping the future. But such a concept demands constant reviewal of innovation strategy. (For project formation by the generative management system, cf. AREGGER, FREY, STRITTMATTER 1976).

(7) Combination of kinds of information: The project principles discussed so far imply reference to oral, written and other kinds of stored information. Such channels are designed as feedback system of teaching and learning (cf. Karl FREY's "L-I-L system" in this report) and are not limited to those taking part in the project (boundary crossing). In particular, one-way communication must as far as possible be avoided. Two-way (reciprocal) information should be the preferred mode, so that all partners in the enterprise benefit from the direct effects of the information or the reaction of others (feedback). This system also affords the opportunity for all taking part to enhance their social and communicational abilities.

(8) Monitoring analysis: The built-in feedback and critical review of all activities require accompanying expert analysis. This is a second feature of the development project. Some thoughts on the conduct of empirical monitoring analysis are set out in Section 5.

3. Schedule of In-Service Training or Project Work

The outline timetable which follows, illustrates the interconnection of content and organization between the project work groups and the in-service training facilities for the rest of the teaching profession. Over the period May 1973 - May 1975 all serving teachers were introduced to new procedures for planning syllabuses within the framework of a basic course in curriculum theory. The course was based on the precept that the model used provided an important contribution in teaching practice to the understanding of the target dimension in education. One essential reform aim of the overall project lies in this new dimension of syllabus formation for the subjects concerned.

The in-service training activities of the work groups were deployed during the first two years of the project in three thematic phases: in the first a start was made on working out the problem of up-to-date curriculum theory. The basic assumption was that a minimum knowledge of recent research findings was needful for dealing with a development of curriculum. The second phase started one year after the preparatory and studies period for the work groups. From January 1975 content systems were evolved that diverged sharply from the existing syllabuses. This called for dividing the vital areas relevant to the special subjects into what were termed thematic ranges, with target data and justifying aspects. The emphasis was on an intermediate level between general teaching goals and operationalized learning aims for single lessons. In this connection, it was found that discussion of subject aims - irrespective of stage and timetable - could open up many new vistas. In parallel

to such placing of milestones for the future curriculum, the third phase further differentiated between specialized subject systems. This breakdown took the form of an identification of foci of goals and targets involving a rough and ready classification into affective social, cognitive and pragmatic/psychomotor learning dimensions.

The following outline timetable is oriented on a time axis. The arrows have no bearing on intensity or duration of the in-service training work in each case.

Outline timetable of official project-related in-service teacher training[1]

Activities of the ten work groups (45 women teachers, 13 training instructresses, 9 district inspectors form the ten groups. One fifth of the total complement of teachers is therefore engaged in these guidance groups).		Activities of sections of the 300-strong total serving teacher complement (About 50 women teachers per activity)
	May 1973	2-day course: Planning of syllabus (connection between existing content/subject components with target setting for instruction by way of a curriculum theory model[2] clarification of requirement with respect to reform: overall feedback, identifying potential group members.
	Sept. 1973	Half-day course: training for group leaders in following course: (setting up "middle management", preparation for group management).
	Oct. 1973	2 two-day courses: syllabus planning (cf. May 1973)
1. Plenary planning conference (discussion of project, working arrangements, intensive in-service training in group studies in curriculum theory area,	Jan. 1974	

(1) The planning studies started in December 1972. The project plan was approved by the Ministry of Education in November 1973 on a proposal by the Schools Council.

(2) cf. LATTMANN 1973.

Study of literature:
Teacher motivation, problems of creating in handcrafts teaching, development of new ways of achieving active pupil participation, measurement of performance, etc.; creating a favorable climate for reform: overall feedback
about 6 working sessions per group
2. Plenary planning conference (cf. Jan. 1973; additionally, mutual presentation of study results)
May 1974
2 two-day courses syllabus planning (cf. May 1973)
about 6 working sessions per group
3. Plenary planning conference (cf. Jan. 1973 and May 1974; additionally start on development of curriculums: one group plans development of a teaching unit "Food", one prepares a set of slides for textiles design)
Sept. 1974
about 6 working sessions per group
4. Plenary planning conference (all groups start on concrete curriculum development:
Jan. 1975

Development of a first curriculum with appropriate system of specializations (vital areas: "Clothing" and "Textiles in the home" or "Food", "Care of Clothing" and "Home");
draft of aims data with supporting arguments for individual thematic areas and descriptions of learning and functional areas in education;
clarification of climate conducive to reform

about 6 working sessions per group

5. Plenary planning conference (Mutual supplementing of draft milestones: 5 groups develop the systems of specialization, the others draft milestones for them) (1) May 1975

2 one-day courses:
syllabus planning (cf. May 1973) (97% of whole teaching staff attended the basic curriculum theory course on "Syllabus Planning")

about 6 working sessions per group

6. Plenary planning conference (Mutual supplementing of specialization systems and milestones; criteria for drafting first part of curriculum (vital areas divided into thematic areas by specialization system with foci cf. content and goals; clarification of climate conducive to reform) Sept. 1975

about 6 working sessions per group

Plan

(1) From May 1975 an additional work group was set up to share the area of reference of a previous one.

7. Plenary planning conference (Mutual supplementing of work results, coordination and drafting; organization of pilot evaluation in sections of teaching staff)

   about 6 working sessions per group

Jan. 1976

The 11 work groups conduct at least 2 group interviews with about 10 women teachers from the serving teacher strength (appreciation of group work)

8. Plenary planning conference (Mutual final draft supplementing of curriculum sectors, preparation of induction courses for sections of total serving teacher strength; planning of future work e.g. further development of milestones; teaching units and aids, with alternatives)

March 1976

May 1976

2 x 1 1/2-day courses: introduction to first curriculum sectors(1)

2 x 1 1/2-day courses: principles of actual teaching syllabus formation with practical examples (2)

(1) Members of work groups act as course leaders

(2) Members of work groups conduct courses as co-leaders, with collaboration of two experts.

4. Institutional Framework of In-Service Training

It was not until 1970 that compulsory and voluntary training facilities were institutionalized in Canton Lucerne (cf. KAISER 1970). Since then, there has been a wide spectrum of available courses each year. The education authority and corresponding cantonal school inspectorate have powers to declare individual courses as compulsory. This is done, for instance, if the introduction of new teaching aids is involved. Such compulsory courses may take up three whole days per year. All teachers are obliged to attend a total of 5 days' courses per year. Half such in-service training may be taken during school holidays. Substantiated attendance of courses outside the canton is counted as voluntary. The courses are further sub-divided between regional and central functions. Courses accomodating up to 50 trainees may be held centrally and for a majority of teachers throughout the canton between the same dates. It is, however, also stipulated that individual courses may be arranged regionally (in smaller groups) and, for example, intermittently during the winter semester.

The activities described in the preceding Outline timetable were scheduled up to autumn 1976 as part of official, voluntary and central in-service training. This sort of project-related in-service training is an innovation in Canton Lucerne.

5. Interim Evaluation of In-Service Training

The foregoing considerations on in-service training for teachers call for a stretching of the conventional evaluation of experiments. In particular, the principles of reform (cf. Section 1) make it plain that sporadic and unconnected appreciations cannot cope with the overall concept of a "project".

In concrete terms this means that an evaluation concept is needed capable of including all systematically designed

activities provided for by the reform strategy of a project and embodied in a research-oriented form (in the sense of a knowledge-enhancing and scientific penetration of project-relevant treatment of problems). This definition includes a multi-layered concept of appraisal for which the term "monitoring analysis" is a more apt expression than "tests" or "evaluation". Such analysis may (a) perform several functions within reform projects and (b) serve different objectives.

The different functions within a project may, for example, be expressed in the form of monitoring analysis at different points of time: clarification of initial conditions or their basis, corresponding to the establishment of planning functions; investigation of changes in conditions during a project; analysis of the extent to which the end objective is modified. It also enables a sub-division of the monitoring analysis by points of emphasis superimposed upon the phased model of project planning, execution and appraisal.

The second distinguishing mark mentioned is to be found in the object of the analysis: e.g. it may be a matter of organizational conditions, personnel efficiency, analysis of problems (also comparative scanning of literature), development and grounding of strategies, conception of research plans, and the like.

Besides the possibilities of locating deadlines and objects of analysis, the number and functions of persons taking part in the monitoring analysis, inside and outside the project, are also to be borne in mind.

To sum up, it is to be noted that monitoring analysis may equally serve structural and creative, as well as evaluati[illegible]l functions. Aside from the interconnections on which innovation strategy may be founded, those which help to support the nexus of problems to be analyzed may also be noted.

Section 3 : CONCLUSION : THEORETICAL PERSPECTIVES

Part VII

Participative and constructive planning and execution of in-service education and training of teachers

1. Overall strategy for participative and constructive in-service training

We proceed on the prior assumption that the planning of in-service training is a systematic process. Its structures and their characteristics are best subsumed under the notion of a "project". The outline on the next two pages shows the chief steps in the process of its formation, an overall strategy. The latter presupposes for its consequential implementation certain qualifications and qualities in those persons involved, or in the educational system. A selection of such prerequisites is listed in the next section.

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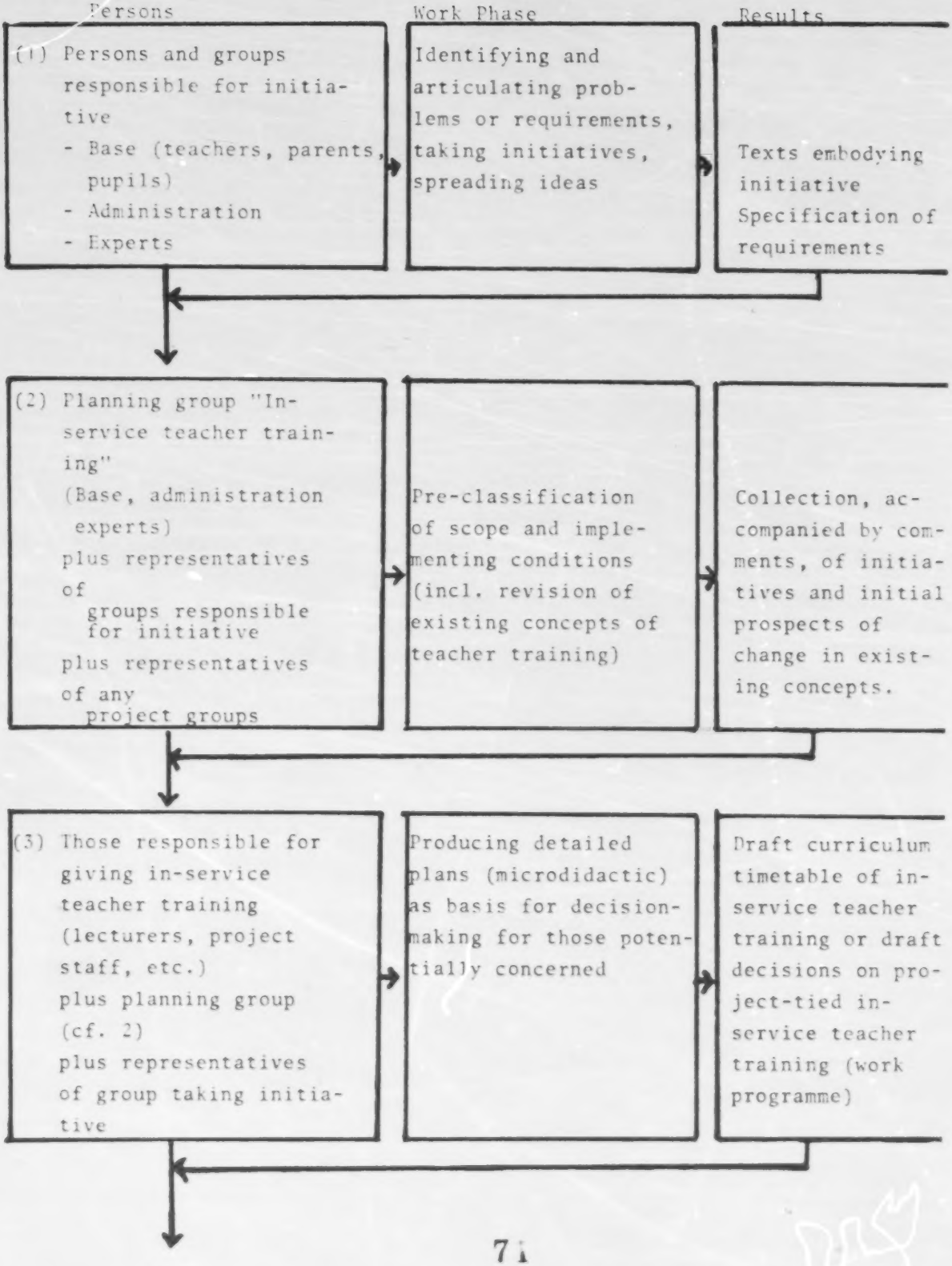
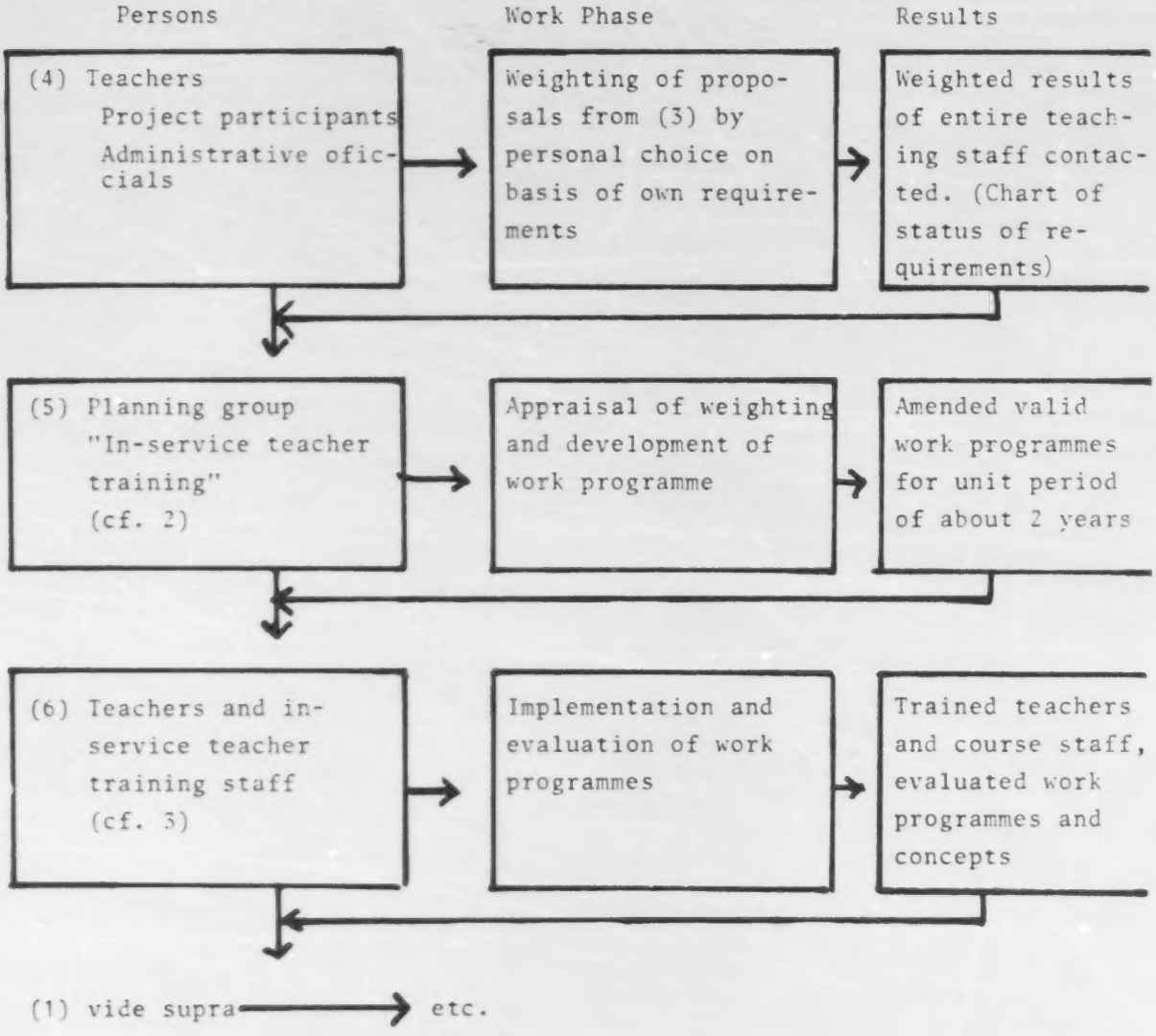
(1) This paper is based on Kurt AREGGER's theory of process innovation (1976). Under this theory the innovation process is taken to mean participative and constructive cooperation of all participants. In the author's framework of thought, all activities and aids are included that are made use of from the acquisition of a new idea to the achievement of an innovation.
The paper also contains certain findings of the group work on the topic "Forms of integration of curriculum reform and in-service teacher training" at the CERI/IPN Seminar on Conditions and Models of Curriculum Innovation at Schliersee bei München, 29th Sept.-11th Oct. 1975. Group teachers, Kurt Aregger and Peter Posch. The following also took part: K. Aregger, CH-Zürich, A. Bertschy, CH-Düdingen, W. Bünder, D-Kiel, H. Dauber, D-Tübingen, R. Fricker, CH-Aarau, R. Gruel, D-Kronshagen b. Kiel, I. Haller, D-Frankfurt, P. Hubler, CH-Zürich, G. Knauss, D-München, H. Müller, CH-Leissingen, P. Posch, A-Wien, C. Rauh, CH-Aarau, G. Schaefer, D-Kiel, G. Scheid, D-München, W. Schumacher, CH-Zug, E. Sebbel, D-Düsseldorf, D. Thomas, F-Paris, M. Witt, D-Hamburg.


Persons
Work Phase
Results
(1) Persons and groups responsible for initiative
- Base (teachers, parents, pupils)
- Administration
- Experts
Identifying and articulating problems or requirements, taking initiatives, spreading ideas
Texts embodying initiative
Specification of requirements
(2) Planning group "In-service teacher training"
(Base, administration experts)
plus representatives of groups responsible for initiative
plus representatives of any project groups
Pre-classification of scope and implementing conditions (incl. revision of existing concepts of teacher training)
Collection, accompanied by comments, of initiatives and initial prospects of change in existing concepts.
(3) Those responsible for giving in-service teacher training (lecturers, project staff, etc.)
plus planning group (cf. 2)
plus representatives of group taking initiative
Producing detailed plans (microdidactic) as basis for decision-making for those potentially concerned
Draft curriculum timetable of in-service teacher training or draft decisions on project-tied in-service teacher training (work programme)


Persons
Work Phase
Results
(4) Teachers
Project participants
Administrative oficcials
Weighting of proposals from (3) by personal choice on basis of own requirements
Weighted results of entire teaching staff contacted. (Chart of status of requirements)
(5) Planning group "In-service teacher training" (cf. 2)
Appraisal of weighting and development of work programme
Amended valid work programmes for unit period of about 2 years
(6) Teachers and in-service teacher training staff (cf. 3)
Implementation and evaluation of work programmes
Trained teachers and course staff, evaluated work programmes and concepts
(1) vide supra
etc.

2. Some preconditions of participative and constructive planning and execution of in-service training

2.1. Combination of kinds of innovation

The social complexity of, and problems involved in innovatory processes necessitate a sound foundation of innovation theory for curriculum reform and in-service teacher training. In this context the common limitation of the term to the introduction of new products no longer meets the case. We need a more comprehensive and detailed analysis of educational innovation. For such a purpose there are few kinds of innovation, differing from one another in respect of the social systems involved.

a) Product, or supply, innovation: the production and introduction of new curricula or teaching media, the introduction of new courses, types of school, information media, the allocation of promotion time, etc.

b) Procedural innovation: alteration of curricular strategies and new sorts of theoretical approach, reshaping of decision-making processes, changes in teaching and learning methods, etc.

c) Structural innovation: establishment of research and development institutions, release of teachers for active participation in school reforms or training leave, systematic integration of pupils and representatives of the public in goal-setting, institutional links between curriculum reform, initial teacher training and in-service training (cf. Karl FREY's "L-I-L system" and Urs Peter LATTMANN's training college, both described in this report).

d) Personnel innovation: enlarging the staff involved in the organization e.g. by bringing in school counsellors, organization consultants, research and policy advisors, planned (by, say, teaching and learning systems in the way of concomitant measures) and

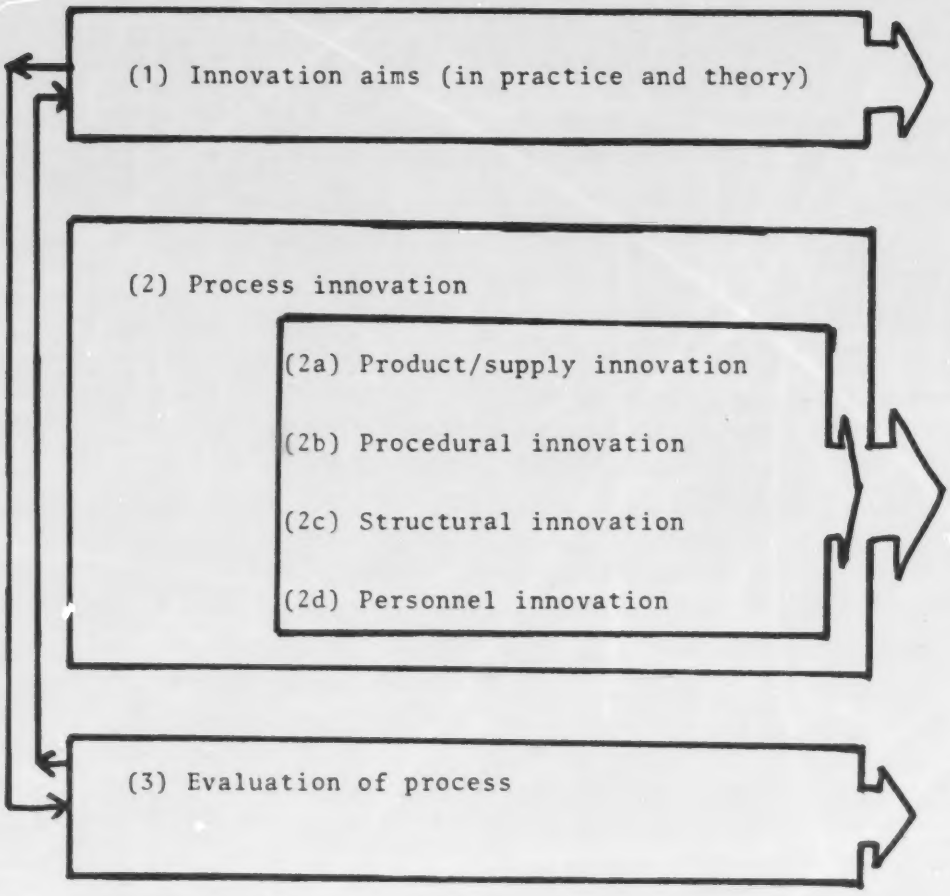
unforeseen changes of attitude among all participants, etc..

These four kinds of innovation must constantly be kept in view throughout the innovation process. A dynamic component is also involved. It results from the combination of the four kinds of innovation in scholastic innovation. Consequently, this approach to innovation is best served by action research concepts or by problem-oriented research (cf. de BIE 1973). These concepts strive to achieve constructive-evaluative dynamics in inter-relations between all the factors and phases concerned. There must therefore be a continuous generation of innovation aims or a system of management (cf. also the generative management system of AREGGER, FREY, STRITTMATTER 1976). The characteristics of continuous generation of aims indicate the nature of the process. Generation of reform goals - with all that it entails, cannot be determined as to content before the reform is initiated. It is a by-product of the reform, arising from the operational interactions set up. This means a break with the classical conceptual framework of experiment and project. In other words, innovation is viewed as a continuous process. This is how educational innovation, with its explicit aims, corresponds to an ongoing process. Such a concept of the shaping of innovation includes the above-mentioned four kinds of innovation (single, or directed to particular points) as sub-varieties. Thus, the four are systematically interconnected, sub-systems of the system of innovation. Their interrelations within the whole are illustrated in the attached diagram. This displays various properties of concepts, horizontally or vertically interlinked.

a) Vertically we see the aims of the innovation process (1). They extend to both practice and theory, and are subordinated to the overall happening. They indicate paths for activities and events that are grouped to form the overall process (2). From the standpoint of innovation, the aims are achieved in the form of four kinds of innovation (2a-2d). According to the extent to which

aims are achieved and innovation accomplished, the four kinds operate in differing ways. The innovation process also governs discussion and aims, directly in some cases and especially through its evaluation (3). Evaluation interacts, directly and indirectly, with the aims through the innovation process. The feedback mechanism is represented by the arrows. The comparatively highly dynamic nature of innovatory process may be seen from the fact that feedback does not only take place via the three elements (aims of reform - innovatory process - process evaluation) but also via pairs of elements (minor loops) which modify aims and their achievement. This constitutes, for example, short-term adjustments to the strategy of innovation to meet unforeseen conditions, and cannot be systematically evaluated over a longer term.

Diagram: Process innovation(1)



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(1) cf. AREGGER 1976, 33

b) The horizontal dimension of the diagram is the time axis. It is typified by the presence of innovatory aims, process innovation and evaluation. The same applies to the four kinds of innovation (2a-2d). This ensures the possibility of continuous generation of aims and concepts (development process).

The concept of process innovation shows that, in educational practice, the common form of innovation at particular points, whether by way of new educational equipment, selection procedures, structures of teacher education or training in especially topical modes of behaviour in education, there can be practically no effective integration in the overall system or incorporation into the systems of the persons responsible. The deficiency may be largely made good by transposing all other operative factors in the educational system to a single planned process. This principle of systematization may best be evaluated in application to educational practice and reform by evolving long-term dynamically designed concepts of school reform, e.g. continuous management systems enabling the overall inter-connection of all innovation activities in the educational system to be brought to light.

2.2. Combination of kinds of coordination

In organizational research we distinguish three kinds of coordination of management (in this case, of the innovation process) which have, in combination, been tried out in practice:

a) Feedback coordination: This depends on the feedback mechanism decided upon. It is not merely confined to individual activities or special products of the innovation process. Ad hoc feedback systems as well as planned and systematically designed information channels may be used.

b) Planning coordination: Adoption of the participative and constructive innovation approach entails planning at more than one level. It would not be enough for planning to be limited to a single country, district or school. Specific functions at all these levels are to be taken into account. One essential project component, however, is constituted by the units composed by, say, individual groups of initiatives and working groups. A multi-level practical model must be designed, differing in planning scope and differentiation according to the particular kind of innovation at each level.

c) Standardization coordination: With the foregoing innovation process dynamic (i.e. innovation of process) the procedural conceptualization and aim-setting necessitate a certain standardization. Thus, for example, instruments (in the form of models) used in other projects, branches of science and areas of study are taken over, modified, as well as newly evolved. Standards of this type help to provide a sound backing for the process of innovation with respect to e.g. communicability of results (using, say, curricular theory models), the systematic interpenetration of problems, and the like.

2.3. Design of an efficient information system

The project-oriented concept of in-service teacher training here advocated can only be realized in its fundamental features with the aid of a properly conceived information system. This also calls for the following remarks:

a) Integration of all concerned in the information network: All concerned in the innovation have to be, to the utmost possible degree, expressly informed of its aims and process. Insight into the broad connections of the process enables much resistance to be overcome and avoided.

b) Direct information channels: Classic bureaucratic models clash with this requirement. Information channels, that is, which follow several possible operational paths, impede innovation by frequntly occasioning losses of information. Such hierarchical models also conflict with the participative and constructive approach we have outlined. In principle, there must be the possibility of direct communication between groups responsible for schemes and the highest educational authority. In this manner, different opinions can be expressed and fully canvassed for the purposes of innovation.

c) Broad spectrum of information sources: If, say, practical experience in the schools is the only source used, innovation may be lopsided. It would be the same if the sole basis were the data of educational theory. The principle of a broad spectrum does, however, exclude practical measures frequently taken, for which the highest decision-making authority is assigned to a few experts.

d) Information going beyond the boundary of the innovation process: As educational innovation is applied to the school system and the latter is a sub-system of society, it is imperative that it supply information to wide areas outside the innovation process. Such extramural information may be conveyed by press, radio and television.

e) Continuous balanced information flows: Innovations may be effectively set up if the addressees or people concerned are permanently convinced of their necessity and expedience. For this reason, a balanced information system appears more effective than one swamped with extraneous information. Experience with projects proves that teachers are willing to read, say, 5-15 pages every two months about project results and planning.

2.4. Enhancement of communication capability

The participative and constructive approach to educational innovation relies on the ability of those taking part to articulate their requirements, conduct realistic analysis of their problems, and plan and apply, as a team, a strategy of problem solving. Such activities can be optimized if participants have a high communication capability (cf. the remarks by HABERMAS 1971). As current teacher training can do little to meet this need, it is a task for the innovation-oriented teacher training. For this, such powers must be mediated, granted or demanded. Procedures of organization development and consultation must be included in in-service teacher training (cf. SIEVERS 1976) and in the educational innovation process (cf. EBELTÖFT 1974). According to BECKHARD (1969, 9) organization development means planned effort encompassing the whole organization and directed by the organization management to upgrade the efficiency and performance by planned interventions in the organization process. This takes account of behavioral science information from inter-disciplinary organization research.

2.5. Design of a system of practical counselling

To achieve a balanced combination of theory and practice in scholastic practice, an important support measure is felt to be practical counselling. This calls for the creation of a new category of educational personnel: counsellors. They will provide support for the teachers in their professional activity. Professionally speaking, they occupy an intermediate position between the class teacher and the supervisory body. Such a senior official position might be manned by seconded university teachers. The counselling system is, on the one hand, institutionalized by the administration as part of the school system, and on the other, has close ties with the universities. This calls for a modification of the universities' function and role as regards their connection with

educational practice (e.g. by development projects and project studies). The relation between classroom practice and the counselling system is primarily ensured by the counsellor or his consultant activity. In addition, it is provided that the counsellor should teach 4 weeks a year in his teachers' classes. This procures for one or more teachers a supplementary training leave. Such leave should be used for purposes cognate with the problem-solving task of the counselling system. At the same time, the counsellor can first of all exercise his teaching ability (cf. also the descriptions of the counsellor-teacher given by FRICK 1975 and of the counsellor-teacher of Karl FREY's "L-I-L system"). This braod reference must not obscure the fact that the efficient functioning of the counselling system depends on many other factors, such as professional standing of the counsellor, institutional preconditions of counselling (regionalization), image of the system in relation to educational policy, form and content of teaching materials and curricula.

Part VIII :

A model of continuous in-service education and training of teachers

1. Demands on the Teacher Training System Owing to the New Reform Structure of the Educational System(1)

The reforms of the educational system have generated three main insights.

a) Firstly, that educational and especially school reform, must now be regarded as a permanent feature of the system. Accordingly, new structures must be developed for the provision of information and for the implementation of school system change.

b) The second insight concerns the analytic approach to the educational system. Education in our society is increasingly regarded neither an end in itself nor a surplus phenomenon, but as an investment. The analysis of the educational system from the investment point of view requires new conceptual categories which cannot be derived directly from economics.

c) The third insight which previous reforms have brought about is that of insufficient capacity for renewal and adaptability in the institutions which currently maintain the educational system. This is particularly true of school administration - especially in its legal aspects, and teacher training.

(1)The literature on which the following remarks are based is not in the text. It is only included in an appendix. The model was formulated in 1970. It is set within the framework of the school reform discussion around 1970 in the German-speaking area and aims especially at teacher functions which are a consequence of the school reforms between 1970 and 1975. The reform of the present school systems will also bring about a revision of the model presented here.

1.1. Consequences for Basic and In-Service Training

The first and third points are particularly instructive for the present discussion on the reform of teacher training: teacher training must adapt itself to constant change and thus, innovation will become a continual task of teachers and of teacher training. The consequences which arise from this cannot yet be foreseen. It is already becoming clear that the idea of "basic training" before beginning a career and of periodic "in-service training" later on cannot do justice to the necessary reform levels of the future (although periodic in-service training was recently and justifiably introduced as a complement to basic training).

A system will probably be necessary which provides the teacher with constant, possibly even weekly learning and informational opportunities. Basic training will, therefore, no longer possess the meaning it has today: it acquires somewhat more of an introductory function.

1.2. Keeping the Teacher Informed About Running a School

Besides the necessity of setting up teacher training as a constant institution - as continual complement to actual employment, a second reform trend is emerging: teacher training as the learning of work techniques, of scientific cultural knowledge stock etc. will have to be supplemented by a general occupation-oriented information service. This must contain information on the introduction of new textbooks, communication on plans for school organization, announcement of education policy discussions on goals, announcement of new research results, of international trends, of experiences with teaching machines, etc.

The information system which has to be integrated into teacher training encompasses

- firstly, comprehensive school innovation preparations, the carrying out and evaluation of these innovations with which the teacher is connected, and
- secondly, results and knowledge in related fields of the school system which the teachers presently only came across by accident.

In industrial firms, the meaning of the second kind of information has been known for some time. It has only recently been ascertained through investigations that in the school system the teachers were often badly - or not at all, informed about the discussions, plans, changes, problems, new research findings, legal dispositions and daily occurrences in their own firm - namely, in the school.

Insufficient information leads easily to the well-known phenomenon that the teacher works in relative isolation because he has no contextual knowledge of the school in which he is employed. Insight into his own functions, possibilities and limitations are thus made more difficult. As investigations of teacher training show, somewhat larger contexts of the school system including forms of development and conditional factors are treated in teacher training but probably on too high a level. The investigations of teacher training in Switzerland from 1967 to 1969 have shown that these school problems are treated in the language of the international institutions such as UNESCO, OECD and the Council of Europe. Students studying to be teachers are often better informed about problems of literacy in India or Pakistan or about different estimations of the need for teachers of people living in the year 2000 than about current school problems in their future field of work. According to these investigations what is lacking in teacher training is information at a middle level, i.e. information on problems

and occurrences in the educational field, for example, of a city, a canton, a school district, a certain social group, a school, etc.

1.3. Prolongation of Basic Training to 4-6 Years

In the meantime, there are different concepts according to which the future occupational problems of the teacher - especially the participation in reforms - are supposed to be dealt with in basic training at a college or university. The teacher training commission of the university planning advisory board in North Rhein-Westfalia postulates one of its three guidelines as follows: "Teacher training should anticipate, a few years in advance, the school reforms which are due" (Heckhausen et al. 1970,7).

The postulate apparently arose from a situation where specific reforms are marked out in advance. Teacher training would then have to take over the, hardly interesting, task of passing on already completely thought out and tested reforms to the teachers. The attractiveness of teacher training as a profession must surely, therefore, decrease. But the postulate conceals the problematic opinion that the goal and the kind of reforms are known. Moreover, it ignores the underlying assumption that reforms are to be shaped by the teachers as well (Heckhausen 1970,7).

1.4. Direct Teacher Participation in Reforms

There is a more important argument against the idea that initial teacher training should prepare teachers for the reforms. One must assume, on the basis of current experiences with dissemination institutions, which elsewhere distribute information in a simplified and useful form for teachers, school administrations, etc., that reforms and improvements do not lead to success in the

school system if the teachers, the school administration, inspectors and other concerned parties are not included in the planning and evaluation of innovations. It is for this reason that a trend exists in the school educational sector to erect centers, apart from purely research centers which carry out development work (e.g. teaching methods) and continually test and introduce this in cooperation with experts.

The innovation will thus be connected with research and development. The result of this for teachers is that there is a possibility for them to be active in reform, which in turn is a prerequisite for remaining capable of renewal.

There is also an economic reason for the direct participation of teachers in the constant renewal of the schools. If teacher training only acted as mediator, then two new and expensive types of institutions would be needed. One institution would have to develop, test and prepare instructional material for teachers. It would have to elaborate the materials to such an extent that they could function without difficulties and with unfailing effect. The other institution would have to steer and check the employment of these instructional materials. Previous experience with the inspectorate and testing institutions - especially in the United States, show these institutions have a tendency to dissociate themselves from teacher training. The same would be true for the relationship of teacher training to the instructional preparation and checking institutions. These different reasons, which could be substantially developed and documented, lead to the conclusion that teacher training and school innovation measures (including teaching aids development, school organizational changes, introduction of media, etc.) should be integrated. It is only of secondary importance if this integration results from a substantial expansion

of the teacher training system or from a combination of innovation, checking and teacher training institutions. In the following sections, this new institution is called the teacher information and learning system ("Lehrerinformations- und lernsystem" = "L-I-L system"). It is an alternative to the present formal and actual separation of teacher training, teacher in-service training, the inspectorate and innovation institutions (teaching means development, school development planning etc.) with respect to teacher training.

2. Plan of the "L-I-L System" (Teacher Information and Learning System)

2.1. Five Functions of the "L-I-L System"

a) The first task is as before, i.e. to enable teachers to implement instruction and educational work unerringly, to enable them to critically question themselves about entire social processes and to make decisions.

b) The second task has a somewhat newer aspect: The "L-I-L system" has the function of helping to prepare permanent school reforms, to help carry them out and to evaluate them inasmuch as they are connected with the teacher. Purely financial, technical, administrative or technological innovations do not belong in the sphere of the "L-I-L system".

c) Thirdly, the "L-I-L system" has the task of informing teachers of all relevant occurrences in the related field of the school. In this context, mainly information and discussions about occupational problems as well as personnel changes might be of importance - next to practical goal discussions, planning steps, research findings and legal and legislative information.

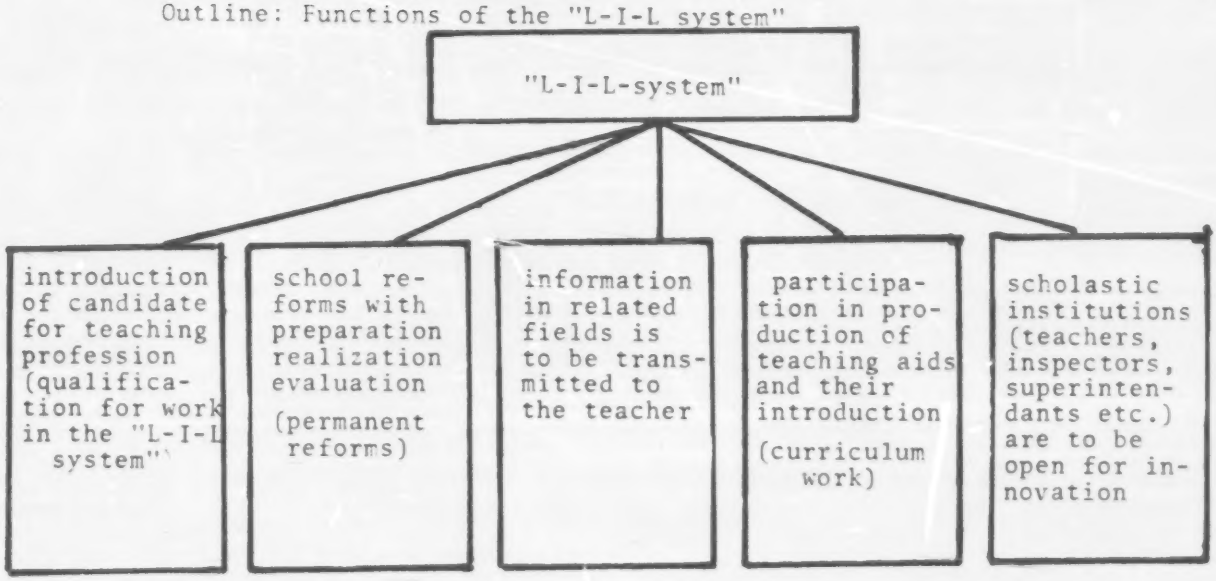
d) The fourth function aims for intensive participation in the development, testing and introduction of teaching

aids. When the teaching aids are not meant for self-instruction but for use by pupils and teachers, then the "L-I-L system" acquires the task of planning and executing the introduction of teaching aids.

e) The fifth task will possibly be the most difficult one in the coming years as experiences of the EBAC-project have shown. This task would be to keep schools open to innovation on the part of teachers, but especially on the part of inspectors and principals. This means that a special training program for principals and inspectors or supervisors must be created.

The different functions are presented in the outline "Functions of the L-I-L system".

Outline: Functions of the "L-I-L system"

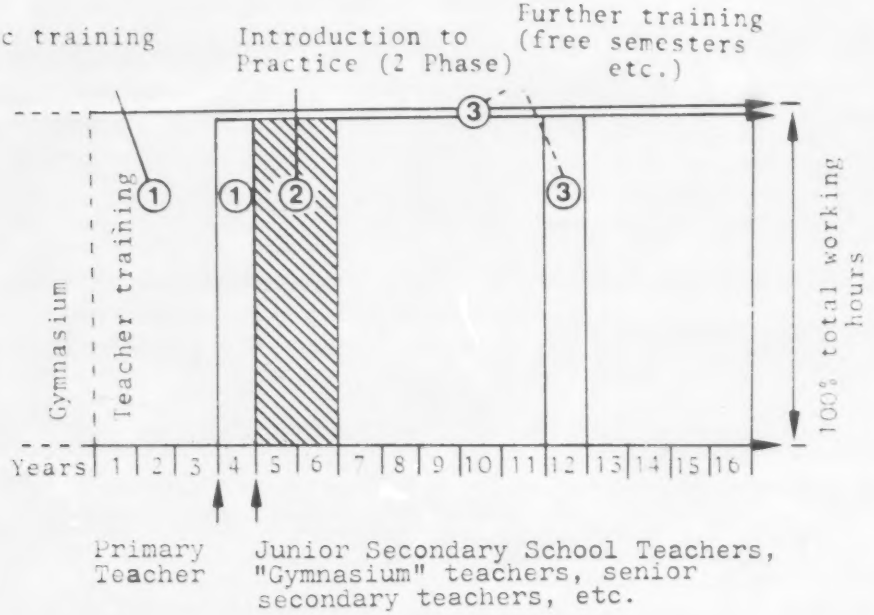

"L-I-L-system"
introduction of candidate for teaching profession (qualification for work in the "L-I-L system"
school reforms with preparation realization evaluation (permanent reforms)
information in related fields is to be transmitted to the teacher
participation in production of teaching aids and their introduction (curriculum work)
scholastic institutions (teachers, inspectors, superintendants etc.) are to be open for innovation

2.2. Relationship of Teaching Activity to Own Learning Capability

The "L-I-L system" would lead to the abolition of the artificial separation between basic and in-service training and between practical and theoretical in-service training. Both sides are united. Above all, it will be necessary to devote a great deal more time to learning and to the provision of information while teachers are actually working. Previous experiences with innovation in the school system (comprehensive schools, new teaching aids, new mathematics, etc.) and with comparable institutions in industry and administration indicate at the moment that at least 10% of the overall working hours should exclusively be allotted to learning and information absorption of the teacher. The justification for this order of magnitude has already been given in part. It relates mainly to the functions of the teacher, the type of behavior in the occupational activity (which, in contrast to other professions, does not automatically lead to new knowledges), the increase of the knowledge basis for the school and the changing aims of the school.

10% of the overall working hours means that about every 10th day will be used for learning and information activity within the framework of the "L-I-L system". The learning and information phase should, however, not be concentrated on a few moments. Different models and practices of present in-service training provide for free semesters, or study or sabbatical

Outline: Basic training and further training in newer teacher training systems


Basic training
Introduction to Practice (2 Phase)
Further training (free semesters etc.)
Gymnasium
Teacher training
100% total working hours
Years 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
Primary Teacher
Junior Secondary School Teachers, "Gymnasium" teachers, senior secondary teachers, etc.

years after an extensive basic training (cf. Outline: Basic Training and In-Service Training in Newer Teacher Training Systems). Such a division of time probably does not correspond to the learning conditions and needs of the teaching profession since a very long basic training as well as in-service training - which comprise several months or even a year, are rarely sufficiently practical. The improvement of practical teaching involves continuous theoretical reflection, in accompaniment to actual practice, the provision of research findings and training to change behavior patterns. For this reason, 5-6 year basic training for teachers is too long. The four to five-year full-time basic training which is presently being aimed at in the Federal Republic of Germany, Sweden and several other countries might possible be premature. The intended emancipation of the teacher from practice and the creation of a critical potential to cope with the political and technological plans of the school system have not been reached because the changes take place too often to be dealt with in initial training.

Thus, linking of transfer between learning and information on the one hand and practice on the other commends itself. Hereby, it is understood that the one should not be treated as pure theory and the other as pure practical knowhow.

2.3. Introduction of Teacher to Teaching

The first semesters and years of preparation of candidates for the teaching profession are no longer to be called basic or fundamental training but "introduction". The end of the introduction has no definite upper limit. One can end the introductory phase in the third or fourth year or, if it is necessary for particular political reasons, in the second or fourth year. At the end of the introductory phase a certificate of qualification for work as a teacher in the "L-I-L system" can be given if it seems opportune to do so. It is probably preferable to issue a 'work permit' after a certain study and training period and after the attainment of certain qualifications. Responsibility in schools would be related to these qualifications.

As examples from teacher training in Sweden and the United States show, it is possible to allow repetition of courses which help to attain the desired qualifications. The same is true for the learning and information process after the introductory period. The teachers' certificate of qualification would thus not directly be based on an exclusive system nor would it be a lifelong professional qualification. It would be based on a differential maximization system of qualifications which can be attained through learning and information. There is thus, the possibility - vide Kaiser (1970) - of "promotion" within the teaching profession and changes

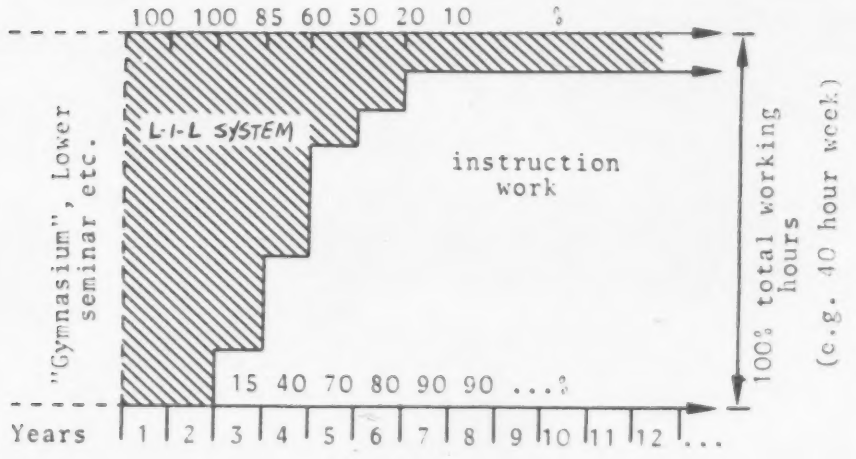
in function both being achieved through attainment of qualifications. In this way, the problematic tests at the end of the present initial teacher training would be abolished.

2 4. Proportion of "L-I-L system" to Teachers's Overall Working Hours

The individual elements of the "L-I-L system" are presented in chronological order below. The schematic representation assumes that a "Gymnasium" (high school) or a similar school form precedes the "L-I-L system".

The first two years of the "L-I-L system" are entirely reserved for the training of the future teacher. The candidate for the teacher profession must, at this time, not yet take on a school practice. The first years are marked by a selective and gradual familiarization with actual school practice. The third year involves 15% practical work in the school.

Outline: The Share of the "L-I-L System" in the Overall Working Hours of the Teacher


100 100 85 60 30 20 10 %
"Gymnasium", Lower seminar etc.
L-I-L SYSTEM
instruction work
100% total working hours
(e.g. 40 hour week)
15 40 70 80 90 90 ...%
Years
1 2 3 4 5 6 7 8 9 10 11 12 ...

The volume of the instruction work is reduced step by step in the fourth, fifth and sixth years. After entrance into the "L-I-L system" the working hours in the school amount to about 40% in the 4th year, about 70% in the 5th year and 80% in the 6th year. The final position, namely 90% (independent instruction), 10% (learning and information assimilation) is reached only in the 7th year.

This allows for an early introduction of the student teacher into the realities of the school and prevents an abrupt transition which often leads to frustration and even dropping out of the profession.

As already shown in the previous section, the step-by-step decrease of training time makes possible the repetition or an in-depth study of courses for those student teachers who do not attain the necessary qualifications. If the transition from training to actual practice follows immediately then the repetition of one year means a great loss of employees in the school and also a loss of wages for the new teacher. The step-by-step transition brings many smaller increases of employees per year for the school administration (in relation to the individual teacher). Calculated in relation to the entire teaching staff, however, the present situation does not change.

The step-by-step assumption of teaching activity has great consequences for the so-called theoretical training in that a course of study, which accompanies actual professional work and which takes place from the third to the sixth year: it must consider concrete problems of the professional teacher.

2.5. Main Emphases in Content of "L-I-L System"

The following result from present knowledge on teacher training and are complementary to the "L-I-L system".

1. Investigations on the relationship of practice and theory in teacher training indicate that practice cannot be renewed from practice but only from theory or from reflection on practice and from empirical research. This means that lengthy school experience does not necessarily equip someone to improve school instruction or to train teachers. It must, however, be assumed that teachers with a great deal of school experience feel that they are much better teachers than the beginners. This can partly be explained by the necessary arrangements of the teachers with their surroundings.

   This has two consequences:

   a) The learning and information possibility must not be limited with increasing seniority but must undergo an intensification.

   b) The new teachers should not be introduced into practice by pure practicians but by professional advisors who are themselves active in practice and belong to the regular teaching staff in the "L-I-L system". The optimal enrichment and improvement of practice might be attained through a step-by-step introduction to working hours. In the attached outline this introduction runs over a period of four years.

2. The first approach of the trainee should result from differential practicals and not global ones.

   a) A differential practical is one which acquaints the trainee only with partial aspects of instruction and is distributed across all subjects.

b) Subjects in teacher training which are partly covered by such practicals are i.e. psychology, sociology, education and all institutional or science educational disciplines. In turn, there is no subject in a differential practical any more which is called "practical training" or "instruction practice" or "methods". One consequence of differential practicals is the forming of groups of from 10-20 students or teachers.

c) The differential practicals might essentially be characterized by three working areas:

- behavior training (including work techniques, behavior patterns in instruction etc.),
- self-control in instruction,
- problem solving behavior of the teacher (instruction as task and problem, being able to theorize, and subsequent application of an experimental attitude).

Differential practical training in teacher training may be begun with observation training, reduction of variables in observing instruction, later on with microteaching and similar working forms which isolate excerpts from the entire scope of work.

The establishment of differential practicals as continuous types of practical training has as a consequence that the subjects: psychology, sociology and education (partly science education as well, although to a lesser degree) must be altered. The most important charcteristic of a differential practical formation of the subjects psychology, education, sociology and similar disciplines is the study of scientific knowledge banks in the area and on the basis of excerpts from actual school practice.

The global practicals in which the trainee is confronted with the entire spectrum of instruction or social experience in the firm (social practical),

might - according to current knowledge on social and other learning forms in complex learning constellations, lead to strong adjustments to the environment at hand and to learning barriers instead of to confrontations with partial aspects which are partly chosen according to available knowledge stocks.

3. To the same context belongs the new setting of emphasis on learning forms which promote and motivate learning. It seems especially necessary at the present time to try to reduce the widespread emphasis on imitation learning. This might possibly be - among other things, a consequence of present teaching strategies which, due to a strong belief in the use of good examples, offer relatively set frames of knowledge for the teaching profession but can also easily hinder learning ability.

   Presently there is the danger that through uncontrolled social learning (in so-called group work) the learning of information is somewhat repressed but in lieu of this simple adaptation patterns come to the fore. This, in turn impedes real learning progress which is necessary within the framework of the school where new goals or, at least, goal discussions must constantly be realized.

4. A further result of the "L-I-L system" is the functional scientific structure. This means that through the narrow connection of practical and so-called theoretical training psychology, for example, cannot be constructed and taught as it is done in scientific psychology. The scientific structures which result from the process of knowing within the framework of science and theory formation can only supply one point of departure for the construction of a subject in teacher training. The other point of departure is formed by the constraints of the practical school situation. The same is true for other subjects as well. This means that there cannot be any so-called practical subjects in teacher training - but also no theoretical or purely scientific ones. The combination of practice and training which is guaranteed by the "L-I-L system" leads to functional scientific structures.

The development of such functional structures requires detailed curricular work.

2.6. "L-I-L System" Professors

As long as teacher training is based on general education schools, the introduction to the problems and behavior patterns of the teaching profession demands a special kind of learning and teaching control. This is especially the case in the first and second years at the beginning of the "L-I-L system". At this time the trainees do not yet have to do a daily stint. Familiarization with the problems of instruction preparation, types of training, social work forms etc. requires special experience. A distinction between introduction professors ("Einführungsprofessoren" = E-Professoren) and advisor professors ("Beratungsprofessoren" = B-Professoren) should therefore be made. Both categories work in relation to practice but specialize in relation to the group being aimed at. The first two years of the "L-I-L system" are taken mostly by E-professors who develop special introductory methods. Starting at the beginning of regular activity in school practice, i.e. in the third year, the B-professors take over the main part of instruction. They have the function of making learning possible for teachers or education students in the context of their professional work.

The B-professors do not end their activity after the teachers have been active in the "L-I-L system" for 2, 3 or more years. On the contrary, they are at the disposal of the teachers for the entire duration of their professional lives. It is mainly they who form the 10% information and learning facility which accompany the remaining 90% of the working hours.

The B-professors take over a part of the functions which are presently held by professional inspectors or supervisors. The inspectors or superintendents have mainly two functions. They are supposed to support, advise and instruct the teachers in practical work. On the other hand, the inspectors must essentially fulfil school administrational tasks. The tasks of school administration, recently of school planning as well, often overlap with advisory functions. Working methods, ways of thinking and possibilities for learning are very different in the two different functions (advice of teachers on the one hand and school administration on the other) and are partly mutually exclusive. An optimal combination of both functions cannot be expected. On the contrary, the present function of inspectors should be divided into two separate professional tasks namely for the B-professors and the administrator.

Experience with school reform, e.g. the introduction of comprehensive schools or new mathematics or specific new media, has shown that the following qualifications are necessary for B-professors. A B-professor must be capable of working with individual groups of between 2 and 20 professionals. He must be familiar with socio-dynamic and social learning processes and he must be able to steer them. He must be capable of implementing scientific experiments in schools. He must also be able to justify, plan, realise and check school innovations. He must be in a position to be able to interpret certain experimental findings (especially statistical ones): it might be necessary for them to be able to read a foreign language fluently. It is therefore to be expected that the B-professor himself has already had practical experience in schools and that he can at any time again work in the school and can reflect critically and theoretically on his practice as well as on scientific knowledge.

Ideal B-professors would be teachers who have already been in the teaching profession for several years and who have attained the necessary qualifications during at least three to five years study, experimentation and participation in projects and in in-service teacher training. In such training, the normal teaching load would have to be reduced to four to five hours because otherwise the necessary learning time would not be available.

2.7. Structure and Organization of "L-I-L system"

No general organization form can be predicted for the introductory years (first and second work year). The conception of the differential practical, which extends through all education, sociological, psychological and instructional subjects does, however, suggest small groups as the basic working unit.

Groups of from 80-120 students divided into sub-groups with about 20-30 students, who - in turn - can be broken down into small groups of 5-10 students for individual differential practicals, are recommended as planning units. A permanent reference and cooperation group for the student from the first months onward - a group with which he always works and in the context of which he learns might also be organised.

The acceptance of constant professional activity and thus of the working field of B-professors suggests the following organizations. The teachers work together in the "L-I-L system" in groups of between 4 and 10 persons. Ideally, these 4-10 teachers would also have working contacts.

The B-professor prepares school reforms with the group and advises them when they have problems. The tasks that the B-professors must accomplish result from a

loose outline of an in-service training program and from the corresponding needs for information and the possibility for learning which is produced in the teachers. This is true for instance for the erection of new schoolhouses, for the introduction of textbooks, for the use of media for school organization forms, for education problems, curriculum revision etc..

The B-professor executes certain school experiments with the teachers. He tests and adapts instructional materials for each region, organizes goal discussions and passes information on the procurement of books, visual aids etc. on to the teachers. In this sense, the B-professor has a disseminative function for the teacher. On the other hand, he is not only the mediator of information to the teacher, who must use these.

He supports the teachers, for example, in the preparation of instruction, in the use of a textbook, in the development of examination topics, in difficult educational questions. He holds certain classes himself or makes certain lesson preparations etc. However, at the same time, he has the task of spending more time than the teachers on the exact working out of certain problems of literature, on the organization of certain experiments and on his own information on certain tasks which are relevant to the teachers. He can do this more economically after he has had special training for this which involves scientific theories and models, curriculum revision, realization of innovation, cooperation and educational psychology.

However, it is not to be expected that one single B-professor solves all these problems by himself. He offers teacher groups or individual teachers much more in certain fields than other B-professors who have specialized in individual fields. Thus, the B-professor

is an advisor as well as a co-worker in certain areas in teaching groups with 10-15 members. In the overall working hours of the teachers, about 2 half days would be taken up every two weeks for learning and information work as part of 10% of the "L-I-L system". If one further assumes that the teacher uses about a half day each in these two half days every two weeks for direct information assimilation, about ½ day for the reflective treatment of practical problems (e.g. instruction, preparation, correction, the discussion of a case as well as of experiences); and if one proceeds from the assumption that a B-professor works together with teachers directly about 1½ days per week and during the rest of the time corrects working papers, plans or evaluates experiments, works on literature and participates in supra-local projects - then it follows that a B-professor can take care of about three groups of 10-15 teachers each. This occurs in direct contact and within the framework of the center at which the introductions have taken place for the individual teacher. If it is not possible - due to space problems, to maintain contact with the center (teachers' seminar, teachers' college, university, education center) then it might be helpful to organize a center with 300-500 teachers and 10-15 professors (as well as the candidates for the teaching profession and the E-professors).

2.8. <u>For the Planning and Guidance of "L-I-L System"</u>

The five functions of the "L-I-L system" require, among other things, a formal and organizational planning of teacher training and information provision. In contrast to actual teacher training, in which - except for a formal subject plan, the contents and goals of information which is offered to teachers is generally decided on by individuals and is more or less future-oriented, the "L-I-L system" demands detailed planning.

The possibility and appropriateness of planning becomes clear when one considers that teacher training is fashioned for the school. Teacher training is by definition not an institution with an end in itself or for the personal edification of the education student, but a training for a profession.

Constant innovations in the school add to the increasing functionalization and goal orientation of teacher training. In order to clarify what information is necessary, training needs can be derived from:

a) The representative of educational policies on goal discussions and projects with respect to school as a whole;
b) The school administration on administrative, organizational law-giving and legal developments in the school;
c) Planning offices;
d) Education research centers which do scientific investigations on the local school system and education research centers which mainly supply international findings and basic knowledge;
e) The professors (E-professors, who introduce education students to the profession, as well as B-professors who advise teachers in actual practice);
f) The practicing teacher and the education student on their educational goals and professional training needs;
g) The different groups which are involved with the school; school, parents, graduates, producers of teaching aids etc.

These groups, which must still be exactly defined in the detailed development of the model, form the "expanded coordination center". Its tasks are mainly the designation of guidelines, the main areas in the teacher training program, the supply of information for the professional planners in the "narrower coordination center".

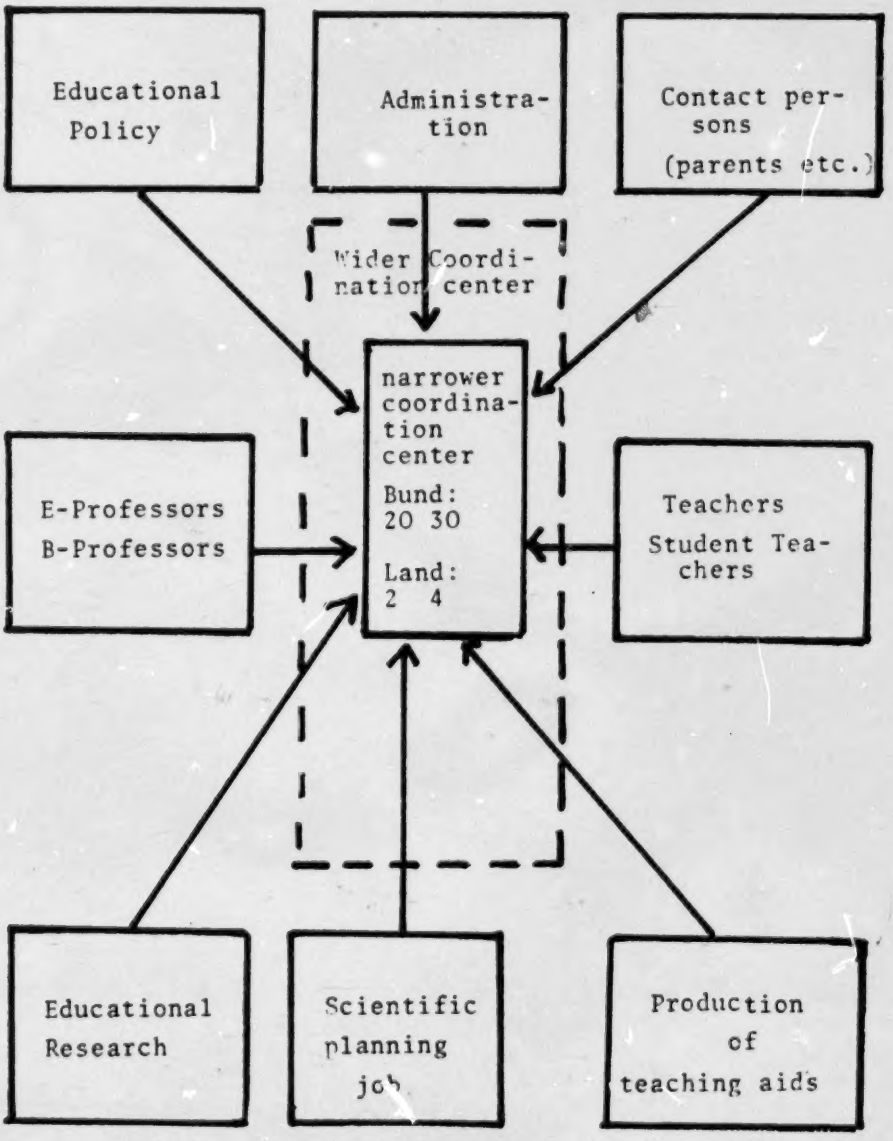
The narrower coordination center consists of official educationalists, psychologists, sociologists etc. (partly of professor jobs), who are concerned with the planning, realization and evaluation of the "L-I-L system". Important functions will be the clarification of the educational needs of the teacher in the school-system and the formulation of hypotheses on that which is to be learned; the development of structuring plans for the training program, the outlining of learning situations, learning organization forms, qualification characteristics of the teacher at the end of the introductory period. In connection with the planning offices, the school administration and the centers for teaching aid development, innovation plans are to be made inasmuch as these concern the teachers. The narrower coordinations center also advises the teaching aid producers and the planners of school organizations on questions of realization of reforms as they apply to the teachers.

2.9. Organization of Coordinating Center

It could probably be set up most effectively on a double level: in the higher, more general level - that of the "Bundesländer" of the Federal Republic of Germany, in smaller countries such as Holland, Finland or Switzerland on the level of the entire nation (national level, "Bundesland", the whole of Switzerland); on the lower, more detailed level with respect to the individual "L-I-L systems" in the individual cities, districts, cantons or regions. The coordination center on the national or federal level which concerns itself primarily with framework concepts, basic patterns and, above all, with scientifically more encompassing investigations would include a minimum of 20-30 scientific workers. This number strikes one as being very slight in the face of the number of education students and is a lower limit. Since the coordination centers are to be active

in a reality-oriented way with respect to the innovation and working conditions of regional and local schools, it would be advisable to construct coordination centers in the individual regions. The local coordination centers encompass 2-4 full-time workers. There is one coordination center for every 30-50 E-and B-professors. Large regions require, according to this method of calculation, more coordination centers.

Outline: Coordination Centers on the Federal and Local Levels



The outline for the "L-I-L system" must be adjusted to different local conditions. It would especially be necessary to substantiate justifications which are given as main points in available investigations or publications.

An in-depth treatment is also necessary of the problem of professors who carry on the teacher training in this system. The continual reference to actual school practice and the interlacing of teacher training and in-service training with the daily life of the teacher requires an exact analysis of the functions of the professors. It is to be assumed that a more intensive - but at the same time, a scientifically based reference to the practice of the teacher must be found than is the case in teacher training at the present time.

Part IX : Bibliography

Aerni, K.: Untersuchung über die Rekrutierung der deutsch-bernischen Primarlehrkräfte von 1957-1966, Bern 1968.

Aigner, H.: Bedingungen der schulnahen Curriculumentwicklung in Österreich. Arbeitspapier für das OECD-Seminar in Bad Hofgastein 26.10.-1.11.1975, Wien 1975.

Aigner, H. und Posch, P.: School - based Curriculum Development in Austria, Report for CERI/OECD, Paris 1976.

Allen, D.R.K.: Microteaching. Reading (Mass.).

Amidon, E.J., Hough, J.B.: Interaction Analysis: Theory, Research and Application. Reading Mass. 1967.

Arbeitsgruppe Curriculum (Reiner Baumann, Doris Knab, Gertrud Stapel): Regionale Religionspädagogische Zentren. Stützpunkte kontinuierlicher Curriculumreform. Rahmenkonzept. Münster 1973. (D.I.P.-Diskussion Nr. 2).

Arbeitskreis Universitäre Weiterbildung (Hrsg.): Einrichtungen der universitären Weiterbildung. Berichte und Materialien 1975. Hannover 1975. (aue-informationen S. 12).

Aregger, K.: Innovation in sozialen Systemen. 2 Bände. Bern/Stuttgart 1975. (Haupt-UTB)

Aregger, K., Frey, K., Strittmatter, A.: Das Generative Leitsystem. Ein Modell für die offene Entwicklung von Curriculumprozessen, Weinheim/Basel 1976. (Beltz)

Aregger, K., Lattmann, U.P.: Lehrerfortbildung und Curriculumentwicklung. Ein integrierter Projektansatz. In: Aregger, K. (Hrsg.): Lehrerfortbildung. Projektorientierte Konzepte und neue Bereiche. Weinheim/Basel 1975, 57-118. (Beltz)

ASCD Yearbook: Role of supervisor and curriculum director in a climate of change. Washington 1965.

Association for supervision and curriculum development (NEA): Research for curriculum improvement. Washington 1957.

Bachelor, D.L.: Zur Soziologie der Lehrer. In: Mitteilungen und Nachrichten des "Deutschen Instituts für internationale Pädagogische Forschung". 48/49 (1967) 1-17.

Baldwin, A.L.: Theories of child development. New York 1968.

Baughman, G.D., Mayrhofer, A.: Leadership training project: a final report. In: Journal of secondary education 40 (1965) 369-372.

Beckhard, R.: Organization Development: Strategies and models. Reading, Mass. 1969. (Addison-Wesley)

Beckmann, H.-K.: Lehrerseminar - Akademie - Hochschule. Weinheim 1968.

Bengtsson, J., Lundgren, U.P.: Utbildningsplanering och jämförelser av skolsystem. Malmö 1969.

Betzen, K., Nipkow, K.E. (Hrsg.): Der Lehrer in Schule und Gesellschaft. München 1971.

Bibliographie établie par l'Institut romand de recherches et de documentation pédagogiques, Neuchâtel, 11 décembre 1975. (Non exhaustive)

Blanc, E., Egger, E.: L'Enseignement en Suisse. Centre suisse de documentation en matière d'enseignement et d'éducation, Genève, juillet 1974.

Blanc, E.: La Formation continue des enseignants de l'enseignement général et technique. Inventaire des actions en cours dans les Etats membres de la CCC, contribution de la Suisse, Genève, septembre 1975.

Blanc, E.: L'Evolution du rôle des maîtres et ses incidences sur la formation professionnelle préalable et en cours d'emploi. Conférence internationale de l'Education, 35ème session, Genève, septembre 1975.

Bokelmann, H.H., Scheuerl, H. (Hrsg.): Der Aufbau erziehungswissenschaftlicher Studien und der Lehrerberuf. Heidelberg 1969.

Bolius, U., Mindler, W.: Der gewollte Mißerfolg, Wien 1971.

Brezinka, W.: Von der Pädagogik zur Erziehungswissenschaft. Weinheim 1971.

Bugelski, B.R.: The psychology of learning applied to teaching. New York 1964.

Bund-Länder-Kommission für Bildungsplanung (Hrsg.): Bildungsgesamtplan. Stuttgart 1973. (Klett)

Bundesministerium für Unterricht und Kunst: Lehrer-Fortbildungsveranstaltungen des berufsbildenden Schulwesens im Schuljahr 1975/76, in: Pädagogische Mitteilungen, Beilage des Verordnungsblattes des BMUK, 1975, 49-70.

Bundesministerium für Unterricht und Kunst: Lehrer-Fortbildungsveranstaltungen für Lehrer an allgemeinbildenden Pflichtschulen im Sommer 1975, in: Pädagogische Mitteilungen, Beilage des Vbl. des BMUK, Jg. 1975, 73-81.

Bundesministerium für Unterricht und Kunst: Bildungsbericht an die OECD, Wien 1975.

Burnham, B. (Ed.): New designs for learning. Toronto 1967.

Cavadini, J., Combes, J.:Enquête relative au perfectionnement professionnel des enseignants de la Suisse romande et du Tessin, document destiné à la Commission pédagogique romande, Secorom et IRDP, Neuchâtel, novembre 1974.

Conant, J.B.: The education of American teachers. New York 1964.

Coombs, P.H.: The world educational crisis: a systems analysis. New York 1968.

Cronbach, L.J.: Einführung in die Pädagogische Psychologie. (Orig.: Educational psychology.) Weinheim 1971.

Dahllöf, U.: Materials and methods of implementing curricula: a Swedish model. In: Curriculum theory network 5 (1970) 32-48.

De Bie, P.: Problemorientierte Forschung. Hauptströmungen der sozialwissenschaftlichen Forschung. Frankfurt/ Berlin/Wien 1973. (Ullstein)

Dickson, G.E. et al.: Educational specifications for a comprehensive elementary teacher education program. Toledo (Ohio) 1968.

Deutscher Bildungsrat (Hrsg.):
Strukturplan für das Bildungswesen. Empfehlungen der Bildungskommission. Stuttgart 1970. (Klett)
Materialien und Dokumente zur Lehrerbildung, hrsg. von Bernhard Hanssler. Stuttgart 1971. (Klett) (Gutachten und Studien der Bildungskommission, 17)
Zur Förderung praxisnaher Curriculum-Entwicklung. Empfehlungen der Bildungskommission. Verabschiedet auf der 35. Sitzung der Bildungskommission am 15./16.11. 1973 in Saarbrücken.

Die Fortbildung der Volksschullehrer in der deutschsprachigen Schweiz und dem Fürstentum Liechtenstein. Arbeitsgruppe LFB, 1974.

Döring, W.: Lehrerverhalten und Lehrerberuf. Weinheim 1970.

Ebeltoft, A.: Kommunikation und Zusammenarbeit in der Schule. Weinheim/Basel 1974. (Beltz)

Egger, F.: Les Conceptions et méthodes nouvelles de la formation continue des enseignants et leurs rapports avec la formation initiale, rapport du délégué suisse sur la réunion d'experts, Strasbourg, 15-17 septembre 1975, Conseil de l'Europe.

Flanders, N.A.: Teacher influence, pupil attitudes and achievement. Washington 1965 (US department of health education and welfare).

Frey, K.: Über Reformen in der Lehrerbildung. In: Neue Zürcher Zeitung 476 (1969) 3.

Frey, K.: Aufbau und Bedeutung der Pädagogik in der Lehrerbildung. In: Schweizerische Lehrerzeitung. 114 (1969) 400-405.

Frey, K. et collaborateurs: La formation des maitres primaires. Genève 1969 (Centre d'information en matière d'enseignement et d'éducation: polyc.).

Frey, K.: Die Ausbildung der Lehrer an Volks-, Real-, Sekundar- und Bezirksschulen. In: Archiv für das schweizerische Unterrichtswesen. 54/55 (1969) 9-39.

Frey, K.: Vorwort. In: Aregger, K.: Lehrerzentrierte Curriculumreform. Bern/Stuttgart 1974, 7-10. (Haupt-UTB)

Frey, K., Häussler, P. (Hrsg.): Integriertes Curriculum Naturwissenschaft. Theoretische Grundlagen und Ansätze. Weinheim und Basel 1973 (Beltz)

Frey, K. und Mitarbeiter: Die Lehrerbildung in der Schweiz. Weinheim 1969.

Frey, K. und Mitarbeiter: Der Ausbildungsgang der Lehrer. Weinheim 1969.

Frey, K. in Zusammenarbeit mit Achtenhagen, F., Haft, H., Haller, H.-D., Hameyer, U., Hesse, H.A., Hiller, G.G., Klafki, W., Teschner, W.-P., van Trotsenburg, E.A., Wulf, Chr.: Curriculum-Handbuch. 3 Bände.

Frick, R.: Der Beratungslehrer. In: Westermanns Pädagogische Beiträge 27 (1975) 339-344.

Gehrig, H. et al. (Hrsg.): Die pädagogischen Disziplinen in der Lehrerbildung. Basel 1970.

Gerbaulet, S. u. a.: Schulnahe Curriculumentwicklung. Ein Vorschlag zur Errichtung regionaler pädagogischer Zentren mit Analysen über Innovationsprobleme in den USA, England und Schweden. Eine Denkschrift. Stuttgart 1972. (Klett)

Gestrelius, K.: Försök till subjektivitetskontroll i samband med analys av bandade explorativa intervjuer. Pedagogisk-psykologiska problem, Nr. 67 (Juli) Malmö 1968 (Lärarhögskolan).

Goldhammer, K., Flam, S. (Eds.): Dissemination and implementation. (Third annual symposion on educational research. Phi Delta Kappa.) Bloomington 1962.

Gozzer, G.: Le Perfectionnement des enseignants. Genève, 1971.

Grossmann, R., Wimmer, R.: Lehrerrolle und politische Bildung. In: Öst. Zb. für Politikwissenschaft, Jg. 4 (1975), Heft 2, 153-175.

Gusdorf, G.: Pourquoi des professeurs. Paris 1963.

Habermas, J.: Vorbereitende Bemerkungen zu einer Theorie der kommunikativen Kompetenz. In: Habermas, J., Luhmann, N.: Theorie der Gesellschaft und Sozialtechnologie - Was leistet die Systemforschung? - Frankfurt 1971, 101-141. (Suhrkamp)

Halpin, A.W.: Administrative Theory in Education. Englewood Cliffs 1963.

Hawthorne, R.D.: A model for the analyses of teachers' verbal preinstructional decisions and verbal instructional interaction. Wisconsin 1968.

Hilgard, E.R.: A perspective on the relationship between learning theory and educational practices. In: Hilgard, E.R. (Ed.): Theories of learning and instruction. The Sixtythird yearbook of the National Society for the Study of Education. Part I. Chicago 1964, 402-415.

Hochwald, K.-H., Kröll, U., Schmitz, R.: Thesen und Materialien zur Situation der Lehrerweiterbildung in der Bundesrepublik Deutschland. Münster 1974. (D.I.P.-Information Nr. 7)

Hüfner, K. (Hrsg.): Bildungswesen: Mangelhaft. BRD-Bildungspolitik im OECD-Länderexamen. Frankfurt a.M./Berlin/München 1973. (Diesterweg)

Institut für Lehrerfort- und -weiterbildung Mainz (Hrsg.): Lehrerfort- und -weiterbildung. Konzepte - Erfahrungen - Kritik. Mainz 1975.

Isenegger, U.: Ein curricules Auswertungskonzept im Bereiche von Lernzielfindung. Zürich/Fribourg 1971, (BIVO-Projekt, Bericht hrsg. H. Gerig).

Isenegger, U.: Lernzielerhebung zur Curriculumkonstruktion. Weinheim 1972.(Beltz)

Jeanneret, W.: Le Perfectionnement des enseignants romands et tessinois. Moutier, 1er mars 1976.

Kaiser, L.: Die Fortbildung der Volksschullehrer in der Schweiz. Basel/Weinheim 1970. (Beltz)

Kaiser, L.: Die Lehrerfortbildung in der Schweiz. Basel/Weinheim 1970. (Beltz)

Köhler, H.: Lehrer in der Bundesrepublik Deutschland. Eine kritische Analyse statistischer Daten über das Lehrpersonal an allgemeinbildenden Schulen. Berlin 1975. (Max-Planck-Institut für Bildungsforschung. Studien und Berichte, 33)

Kyöstiö, O.K.: A study of teacher role expectations. Helsinki 1968.

La Formation continue des enseignants. Akademie für Lehrerfortbildung, Rapport d'un stage européen de la CMOPE (Confédération mondiale des organisations de la profession enseignante), Dillingen (Alemagne), 26-31 octobre 1973.

Landesinstitut Schleswig-Holstein für Praxis und Theorie der Schule (Hrsg.): Das IPTS - Ziele, Wege, Probleme. Kiel 1972.

Landesinstitut für schulpädagogische Bildung Nordrhein-Westfalen (Hrsg.): Ausbildung - Fortbildung - Weiterbildung. Feststellungen, Folgerungen, Forderungen. Düsseldorf 1975. (Informationen zur Lehrerfortbildung, 4)

Lattmann, U.P.: Lernziel und Unterrichtsvorbereitung. Freiburg 1971.

Lattmann, U.P.: Schulnahe Lehrerbildung. Darstellung und Werkstattbericht über ein realisiertes Lehrerbildungsmodell. Zürich/Köln und Aarau/Frankfurt 1975. (Benzinger und Sauerländer)

L'Éducation permanente des enseignants. 3ème Congrès de la SPR, 13-14 juin 1970, La Chaux-de-Fonds.

Le Perfectionnement des enseignants primaires, in L'Educateur, Montreux, 22 décembre 1972, No. 40. (Enquête par canton).

Lucio, W.H., McNeil, J.D.: Supervision. New York 1969.

Lüscher, K.: Der Beruf des Gymnasiallehrers. Bern 1965.

März, A.: Anmerkungen zum Stand und zur Weiterentwicklung der Lehrerbildung an den Pädagogischen Akademien Österreichs, in: Kärntner Schulversuchsinformationen, 1974, Heft 2, 37-42.

Majault, J.: La formation du personnel enseignant. Strasbourg 1965.

Mialaret, G.: Réflexions sur les sciences de l'éducation. In: Les sciences de l'éducation 4 (1967), 3-9.

Mitter, W.: Quantität und Qualität - die zentrale Frage in der Planung sowjetischer Lehrerbildung. In: Die Deutsche Schule, 60 (1968) 416-422.

Müller, P.: Dokumentation zur Lehrerbildung. 2 Bände, Berlin 1971. (Max-Planck-Institut für Bildungsforschung. Studien und Berichte, 22)

Niemann, H.-J.: Der Lehrer und sein Beruf. Weinheim 1970.

Neuwirth, E.: Die schulpraktische Ausbildung als zentrale Aufgabe österreichischer Lehrerbildung, in: Erziehung und Unterricht, 1974, Heft 7, 393-405.

Oliver, A.I.: Curriculum improvement. New York 1969.

Posch, P.: An Austrian Case Study, in: CERI/OECD, Handbook for Curriculum Development, Paris 1975.

Posch, P.: Lehrerfortbildung im Rahmen des Lehrzielbank-projekts, in: CERI/IPN: Bedingungen und Modelle der Curriculuminnovation, Kiel 1976 (in Druck).

Projektgruppe Regionale Lehrerfortbildung (Hrsg.): Curriculum konkret. Dokumentation eines Modellversuchs. Neuorganisation der Lehrerfortbildung als Teilstück schulnaher Lehrerfortbildung. (Modellversuch des Hessischen Kultusministers) Beginnend mit Heft 1, 1973.

Rapport annuel du Centre suisse pour le perfectionnement professionnel des professeurs de l'enseignement secondaire. Conférence des Directeurs cantonaux de l'Instruction publique, 1974.

Rauschenberger, H.: Zur Frage der Schulpraxis in der Lehrerbildung, in: Kärntner Schulversuchsinformationen, 1974, Heft 2, 43-46.

Reeves, A.W., Andrews, J.H.M., Enns, F. (Eds.): The anadian school principal. Toronto 1962.

Richmond, W.K.: The education industry. London 1969.

Rickenbacher, I.: Die Rolle des Lehrers in der Bildungsplanung. In: Schweizer Schule 56 (1969) 508-511.

Riesen, H.: Lehrerfortbildung. Die Arbeit der Arbeitsgemeinschaft für Lehrerfortbildung in der deutschsprachigen Schweiz, in: Schweizerische Lehrerzeitung, Zürich, 22 august 1974.

Robinsohn, S.B.: Theorie und Praxis der Lehrerbildung. In: Zeitschrift für erziehungswissenschaftliche Forschung 2 (1968) 101-110.

Roller, S.: Commission pour la formation des maitres de demain: vues prospectives. Neuchâtel 1971.

Santini, B.: Das Curriculum im Urteil der Lehrer. Weinheim 1971.

Schuller, A. (Hrsg.): Lehrerrolle im Wandel. Weinheim 1971.

Seel, H.: Schulversuche im Bereich der Zehn- bis Vierzehnjährigen, Arbeitsbericht Nr. I/19 des Zentrums für Schulversuche und Schulentwicklung, Klagenfurt 1975.

Shaplin, J.T., Oolds, H.F. (Eds.): Team teaching. New York 1964.

Sievers, B.: Organisationsentwicklung als Strategie der Integration von Schulreform und Lehrerfortbildung. In: Aregger, K. (Hrsg.): Lehrerfortbildung. Projektorientierte Konzepte und neue Bereiche. Weinheim/Basel 1976, 240-276. (Beltz)

Symonds, P.M.: What education has to learn from psychology, transfer and formal discipline. In: Teachers college record 61 (1959) 30-45.

Tausch, R., Tausch, A.: Erziehungspsychologie. Göttingen 1970.

Tuggener, H.: Der Lehrer. Zürich 1962.

Turner, K.L.: Teaching as problem-solving behavior: a strategy. In: Biddle, B.J., Ellena, W.J.: Contemporary research on teacher effectiveness. New York 1964, 102-126.

Vallance, T.R., Crawford, M.P.: Identifying training needs and lating them into research requirements. In: Glaser, R. (Ed.): Training research and education. Pittsburgh 1962, 479-523.

Weibel, W.: Die Lehrerfortbildung in der Schweiz. Lehrerseminar des Kanton Luzern, Hitzkirch, 1973.

Weiss, R.: Lehrerfortbildung, Linz 1975. (OÖ. Landesverlag)

Widmer, K.: Lehrerbildung und Erziehungswissenschaft. In: Pädagogische Rundschau 20 (1966) 464-473.

Zrzavy, A.: Lehrerbefragung 1973, Arbeitsbericht Nr. II/3 des Zentrums für Schulversuche und Schulentwicklung, Graz 1974.